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GENERAL BOARD OF HEALTH.

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LETTER

OF THE

PRESIDENT OF THE GENERAL BOARD OF HEALTH,

TO

THE RIGHT HONOURABLE THE VISCOUNT PALMERSTON,  
SECRETARY OF STATE FOR THE HOME DEPARTMENT, &c., &c.,

ACCOMPANYING A

REPORT FROM DR. SUTHERLAND;

ON

EPIDEMIC CHOLERA

IN THE METROPOLIS IN 1854.

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Presented to both Houses of Parliament by Command of Her Majesty.

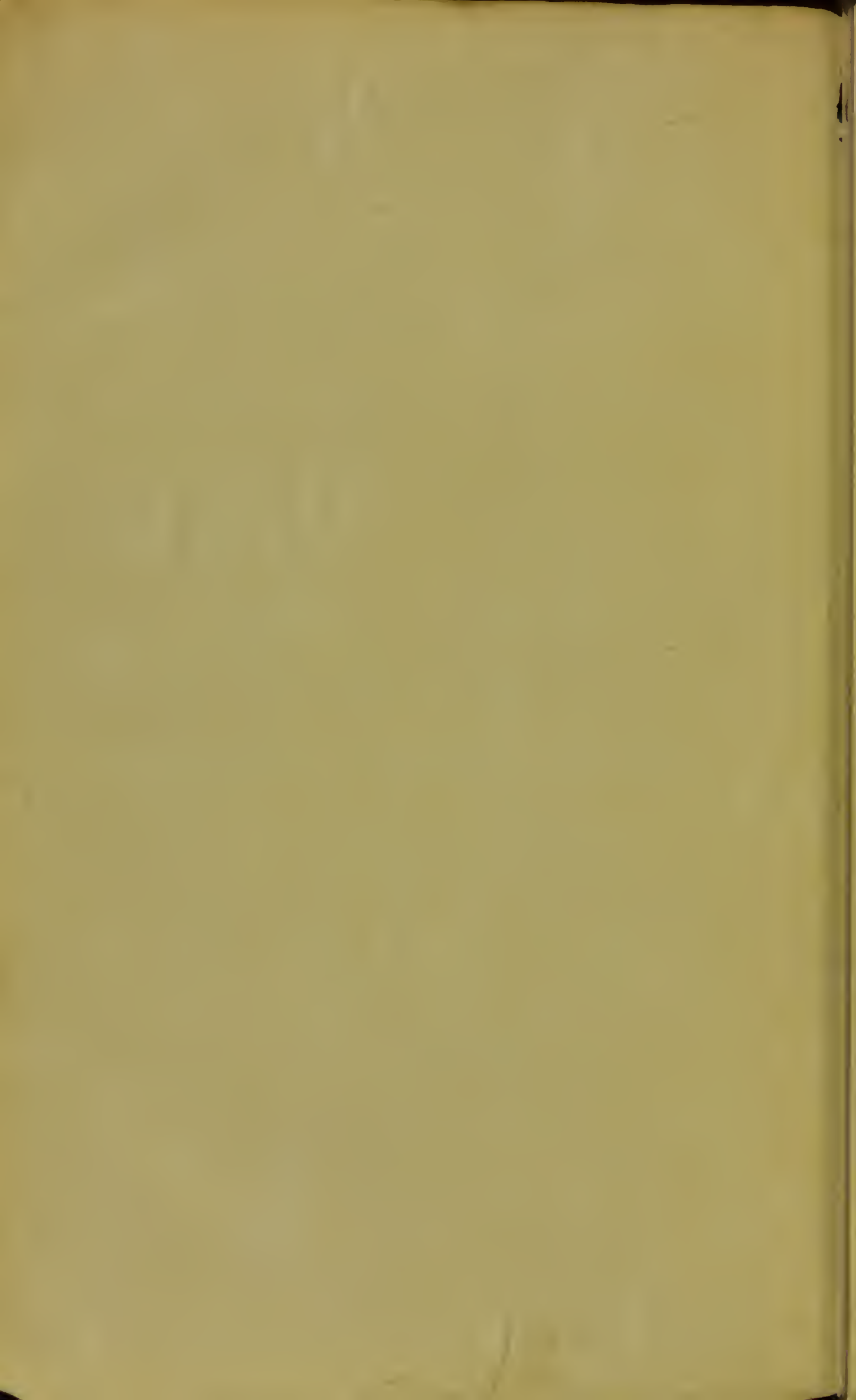
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LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,  
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.  
FOR HER MAJESTY'S STATIONERY OFFICE.

1855.







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THE  
LIBRARY OF THE  
MUSEUM OF NATURAL HISTORY  
AND  
ZOOLOGY  
OF THE  
CITY OF LONDON

1843-1844  
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THE  
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General Board of Health,

January 29, 1855.

MY LORD,

As cholera has now happily disappeared from the United Kingdom, and the active duties of the General Board of Health in relation to that epidemic have come to a close, I am anxious to lay before your Lordship the steps which have been taken under my direction, in this office, in execution of the duties imposed on the General Board of Health by the Nuisances Removal and Diseases Prevention Acts, 1848 and 1849 (11 & 12 Vict. c. 123., 12 & 13 Vict. c. 111.)

The general relations of epidemic cholera to the various conditions of the population have already been examined in detail, in the report of the late General Board of Health on the visitation of 1849. In this communication I shall confine myself to a statement of the proceedings actually taken under my directions, as introductory to the several reports upon the outbreak of 1854, viz. those about to be made by the Medical Council through its committees, those by the scientific inquirers acting under the Board on the special subjects of their several investigations, that by Dr. Sutherland on the epidemic as it prevailed in the metropolis, and that by Dr. Milroy on the epidemic as it prevailed in the other parts of England, included in the returns of the Registrar-General. All these reports I hope soon to lay before Parliament.

I entered on my duties as President of the General Board of Health on the 12th of August 1854. At this date cholera was rapidly on the increase; the deaths from that disease in the six weeks ending with that day having been successively 1, 5, 26, 133, 399, 644.

On the same day I directed an application to the Treasury for leave to employ two Medical Inspectors. The sanction of the Treasury having been forthwith received, Dr. Sutherland and Dr. Milroy were the same day appointed.

The duty assigned to these gentlemen was, to advise and assist local authorities in the exercise of their powers under the Nuisances Removal and Diseases Prevention Acts, and to

aid me in the performance of my functions under the same Acts which empower the General Board to issue regulations and directions for the prevention and mitigation of epidemic disease.

Finding that those Acts gave me no effectual power to enforce upon Boards of Guardians the execution of these regulations and directions, I determined to do my best by way of urging and aiding the local authorities in their execution. With this view the following circular was the same day issued to all the Metropolitan Boards of Guardians :

“ The General Board of Health,  
“ Whitehall, August 12, 1854.

“ SIR,

“ I AM directed by the General Board of Health to inform you, that it is the anxious desire of the Board to co-operate with the Metropolitan Boards of Guardians in preventing and mitigating, as far as possible, the visitation of epidemic cholera, which has already made its appearance in many districts of the metropolis.

“ While the Board would deprecate any diminution of local responsibility or interference with local efforts, it is possible that their assistance and advice may be acceptable to Boards of Guardians, and they are prepared therefore to direct one of the Board's medical officers to attend and confer with the Guardians in company with an Inspector from the Poor Law Board\*, as to the preventive measures already taken or to be taken, and the arrangements for dispensary accommodation and treatment of the sick in accordance with the recommendations in the minute on preventive measures already sent. I am, therefore, to request that you will convene a special meeting of the Guardians for the purpose of ascertaining whether they are desirous of receiving the assistance and advice of this Board in the manner above indicated, and that you will communicate to me the wishes of the Guardians in this respect.

I am, &c.

“ To the Clerk of the Guardians. “ T. TAYLOR, Secretary.”

A detailed account of the manner in which this circular was received will be found in the 1st section of the annexed report by Dr. Sutherland (p. 19 *et seq.*)

As the disease increased in intensity, feeling the want of fuller information as to what local authorities were doing, I appointed six additional Medical Inspectors on the 2d of

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\* The Poor Law Board had at once offered the aid of their inspectors in any conferences that might arise from this letter.



September, and on the 6th of September I increased that number to ten.

The supervision of the metropolitan parishes and unions affected by the epidemic was entrusted to these gentlemen, and the following instructions were placed in their hands:—

INQUIRIES to be made by MEDICAL INSPECTORS.

1st. The extent of medical relief now existing:—

- a. Number of medical officers.
- b. Number of day and night dispensaries.
- c. Number of house-to-house visitors.
- d. Measures for arresting diarrhœa in workhouses.
- e. Copies of notices issued by Guardians.
- f. Hospital accommodation and houses of refuge.

2d. Extent of the disease:—

- a. Number of cholera cases.
- b. „ „ diarrhœa cases.
- c. Deaths from either, under union medical officer.

This information to be obtained for a few days back, and tabulated in one of the returns under the heads of—

1. District medical officers' cases.
2. Dispensary cases.
3. Medical visitors' cases.

3d. Localities affected:—

- a. A list of those where cholera or diarrhœa chiefly prevails, and has hitherto or recently prevailed.
- b. Visit some of the worst localities; inspect them and the houses; converse with the people, ascertain to what extent diarrhœa prevails, and what cleansing measures, lime-whiting, &c. may be required, and whether there be any Inspector of Nuisances to carry out these measures.
- c. Examine the water supply, and ascertain whether it is taken from the river above or below Chelsea reach.
- d. Inquire as to nuisances or noxious trades, and inspect them.

4th. Report to the General Board of Health,—

- a. On the particulars mentioned above.
- b. On the number of additional dispensaries required.

- c. On the additional medical officers required.
- d. On the additional medical officers required, stating their number.
- e. Additional Inspectors of Nuisances, or cleansing staff required.
- f. Additional hospital accommodation, or houses of refuge required.

In a few days all the infected districts were under the supervision of the Medical Inspectors, who were in constant communication with the local authorities. They made daily reports to me of the progress of the epidemic, and the measures taken by the Boards of Guardians. These reports I immediately minuted with instructions, and the Inspectors were directed to bring the substance of my minutes under the notice of the local authorities.

The distribution of the metropolitan districts among the Inspectors will be found at the conclusion of the first portion of the annexed report. (p. 25.)

Dr. Sutherland's report itself is an abstract of their separate reports.

Before the Inspectors began their labours, circulars had been prepared and issued from this office in large numbers, informing the public of the proper way of proceeding for the removal of nuisances, pointing out to Boards of Guardians their statutory duties in relation to the epidemic, and setting forth plain and brief precautions to be observed during the prevalence of cholera.

Copies of these are printed in the Appendix (p. 75 *et seq.*).

The late Board of Health, in their last year of office, had compiled and circulated a summary of instructions to local authorities on the organization of preventive measures against cholera.

Fresh copies of these were now distributed, and are printed in the Appendix (page 75 *et seq.*) as revised at a later date by the Medical Council.

The regulations and directions issued by the late Board under the authority of the Nuisances Removal Act, 1848, having expired on the 10th of September, on the 8th and 14th of September new sets of regulations and directions were issued for England,\* while those for Scotland, having

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\* For which see Appendix, p. 112.

been settled in concert with the public and legal authorities in that part of the kingdom, were renewed unaltered on the 8th of September.

These regulations and directions will remain in force for six months from their respective dates.

Meanwhile, though the services of the Medical Inspector enabled me to carry out the administrative medical arrangements which the law directed, I became every day more and more impressed by the necessity of some means by which this department might be enabled to avail itself of the best medical assistance in matters coming within the domain of scientific medical inquiry. With this view it seemed to me desirable that scientific inquiries (chemical, meteorological, and microscopical) should be instituted into the circumstances attending the epidemic, and that a Medical Council should be appointed to act during the prevalence of the epidemic.

The requisite sanction having been procured, a Medical Council (*a*) was appointed, consisting of—

1. †John Ayrton Paris, M.D., F.R.S., President of the Royal College of Physicians.

2. \*Sir James Clark, Bart., M.D., F.R.S., Physician in Ordinary to the Queen and to his Royal Highness Prince Albert.

3. \*James Alderson, M.D., F.R.S., Fellow and Treasurer of the Royal College of Physicians, Physician to St. Mary's Hospital

4. \*Neil Arnott, M.R.C.P., Physician Extraordinary to the Queen.

5. †Benjamin Guy Babington, M.D., F.R.S., Fellow of the Royal College of Physicians, late Physician to Guy's Hospital.

6. †Alexander Tweedie, M.D., F.R.S., Fellow of the Royal College of Physicians, Physician to the Fever Hospital, Examiner in Medicine in the University of London.

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(*a*) Of these, those marked † were nominated by the Royal College of Physicians. Those marked § were selected from a list furnished to the President by the Royal College of Surgeons. Those marked ¶ were nominated by the Society of Apothecaries. Those marked \* were nominated by myself.



7. \*William Baly, M.D., F.R.S., Assistant Physician to Saint Bartholomew's Hospital, Physician to the Millbank Penitentiary.

8. §William Lawrence, F.R.S., Vice President of the Royal College of Surgeons, Surgeon to St. Bartholomew's Hospital, Surgeon Extraordinary to the Queen.

9. \*John Simon, F.R.S., Surgeon to St. Thomas' Hospital, Officer of Health in the City of London.

10. \*Richard Owen, F.R.S., Professor of Zoology in the Royal College of Surgeons.

11. ¶Nathaniel B. Ward, Master of the Society of Apothecaries.

12. ¶John Bacot, Inspector of Anatomy, Member of the Senate of the University of London.

13. \*William Farr, M.D., Registrar General's Office.

Dr. R. D. Thompson, Dr. Hassall, and Mr. Glaisher were at the same time appointed to conduct, respectively, chemical, microscopical, and meteorological inquiries in connexion with the prevailing disease.

The Medical Council met on the 6th of September, and the following letter, then read, will explain my view of the objects of their appointment :

General Board of Health,  
September 6, 1854.

GENTLEMEN,

In opening the first sitting of the first Medical Council that has allowed itself to be associated with this department, it becomes my duty, after thanking you for the public spirit and benevolence you have shown in undertaking this service to the community, to point out briefly both what appear to me to be the general objects in respect of which your assistance and advice will be useful, and the more special and immediate matters to which your attention is invited at present.

I am charged with the responsible duty of directing the sanitary administration of the country, so far as we have as yet anything deserving the name.

But upon scientific matters connected therewith, where the medical profession are to be consulted, advised with, laid under contribution for service or information, or called upon to act, I wish to have the aid of a Medical Council, to whom I may submit questions for consideration, and whom I may ask to suggest or undertake such inquiries as may from time to time be necessary.

The special work of this department is the application of the Public Health Act to such towns as petition for it.



Besides this, in times of epidemic, the Board is charged with the duty of issuing regulations and directions for the prevention, as far as possible, or mitigation of disease.

It will be apparent that it is in connexion with the latter branch of my duties I shall have occasion for your valuable services.

But should public confidence be acquired to this department, should the science of public health take its place among the matters with which statesmanship may properly concern itself, as I believe must sooner or later be the case, a wider field will be opened to this department and to the professional advisers whom it may be able to associate with it.

The circumstances of this country, its wealth and poverty, its great cities with their social extremes of luxury and privation, its aggregation of individuals on the same spots, its multifarious industrial occupations, all point to the duty of studying the effects on life and health of trades, callings and processes, habitations, sites, water supply, sewerage, the adulteration of substances used for food, drink, and medicine, as matters vitally affecting the well-being of the nation.

On many of these subjects I hope it may be in my power at future periods to avail myself of scientific aid, but at present, the matter which most presses is the epidemic now unhappily prevalent in this metropolis, as well as in other parts of the United Kingdom. With this my duty brings me into active and hourly contact, and I should deeply regret if (besides the work this office may be enabled to do at present in aid of local authorities, or when necessary in compelling the observance of the law) I am not able, by your assistance, to deduce from this terrible visitation both facts and lessons which may hereafter be made available. For this end I have the cordial co-operation of the Poor Law Board, the Registrar General, and the Commissioners of Sewers for the metropolis, while, all through the country, the Registration Staff and the Local Boards of Health may render me most useful service. But the most valuable result within my reach at present will be wanting, unless I have your aid in procuring such information upon the concomitants and course of the epidemic as only medical and scientific observation can detect.

Cholera is now very widely prevalent in London; up to the 2d of September 4,070 persons have died of the disease in the metropolis alone. I purpose to direct inquiries into the conditions which attend the presence of the epidemic so far as they can be gathered from meteorological, microscopical, and chemical observation.

The gentlemen who have undertaken to conduct these inquiries are here, and will detail for your approbation what is proposed or has been done.

But besides this I have caused a form to be drawn up, which I propose, with your approval and after it has been settled by you, to

have circulated among all the qualified medical practitioners in London, with a view to determine the number of cases of choleraic disease, the proportion of deaths and recoveries, and the treatment pursued in each case.

The settlement of this return is the immediate object of this meeting of the Council.

I wish also that Dr. Sutherland should state to you what has been done in the way of providing for superintendence of the execution by local authorities of the directions and regulations of the Board, and I shall be much obliged if you would aid me by any suggestion as to other means for this purpose that you may think desirable to be taken.

I have also directed to be laid before you copies of the hand-bills issued by the Board, giving plain advice adapted to the emergency. Any suggestions as to these I shall be thankful for, as indeed for everything that may briefly and clearly inform the public mind, and, while promoting calmness and confidence in the means of prevention, indicate these means in the way best adapted to popular apprehension.

I have, &c.

B. HALL.

I feel deeply grateful to the distinguished members of the Medical Council for the self-devotion with which they have given their powers and their time to the service of the public, in connexion with this Board.

A similar acknowledgment is due to the eminent men who undertook the different branches of the scientific inquiry.

The Medical Council held numerous meetings, and besides revising all the instructions issued by the General Board, in so far as relates to medical matters, they lost no time in preparing forms for circulation among medical practitioners where cholera prevailed, intended to elicit the medical results of their experience as to the epidemic.

The issue of these forms and inquiries has produced a great number of returns, from which the committees of the Council have undertaken to prepare reports, which will be laid before your Lordship, when they are placed in my hands, with the reports of the scientific inquirers, and of the committee of the Council to whom these reports have been submitted.

For the purposes of these reports, and of that in preparation by Dr. Milroy, on the epidemic beyond the limits of the metropolis, it has been necessary to compile voluminous returns from the materials collected in the Registrar General's office, and these are being diligently proceeded with.



In order that the epidemic might be brought under observation in Scotland, on the day after the first meeting of the Medical Council I communicated with the Royal Colleges of Physicians and Surgeons, Edinburgh, and the United Faculty of Physicians and Surgeons, Glasgow. I have to thank these bodies for their ready co-operation. They prepared forms of return for circulation in parts of Scotland visited by the epidemic; and have undertaken the duty of classifying and arranging the information which it is hoped these returns may elicit.

The report by Mr. George Glover on the epidemic in the common and model lodging-houses in the metropolis has already been presented to Parliament.

It appears to me to afford the clearest proof, both of the effect of good sanitary conditions in warding off the pestilence, and of the possibility of attaining these conditions in even bad classes of existing houses.

I have directed the preparation of a separate report upon the district about Golden-square, which was so fearfully visited by the epidemic. This report I hope soon to be able to lay before Parliament.

I believe there are very few examples of so close and careful a house-to-house inquiry into the condition of a district, as that on which this report is founded. The inquiry was conducted by Dr. Fraser, aided by the voluntary and gratuitous services of Mr. J. M. Ludlow and Mr. T. Hughes. I am glad to have this opportunity of acknowledging the zealous discharge by these gentlemen of a most laborious, painful, and even dangerous duty, undertaken solely from motives of humanity and public spirit.

The ravages of the epidemic, however, were not confined to London. It appeared during the autumn in many parts of the United Kingdom, and in some cases with great severity.

When notice of its appearance in a locality was received at this office, full instructions were at once sent down to the local authorities, both as to their legal duties and the organization by which those duties might most effectually be performed. A list was prepared and kept at this office of gentlemen qualified and willing to act (at the expense of Boards of Guardians) as medical superintendents of districts,\* as

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\* For the duties assigned to these officers, see the Board's instructions (page 83, Appendix).

assistants to or substitutes for parochial medical officers, and as house-to-house visitors.

Many applications for the services of gentlemen in these different capacities were made, and at once attended to. I am glad to be able to state that their services have been found most useful, and have in many instances been specially and gratefully acknowledged by the Boards of Guardians at whose request they have been given.

Several reports have been received from the gentlemen thus sent down by recommendation of this Board, and these have been placed in Dr. Milroy's hands for his use in preparing his report on the epidemic beyond the metropolis. The materials for this report are, I am sorry to say, very much less ample than those which have been at the command of Dr. Sutherland.

In conclusion, I am anxious to point out to your Lordship the principal results which appear to me to follow from the experience summed up in the report of Dr. Sutherland. These conclusions, though deduced from the metropolis alone, are in most respects identical with those at which I have arrived from all the information I have received from other parts of the country upon the sanitary condition of the population, and accord with all previous experience on the subject. The evils enumerated may be regarded in a great measure as general, and as admitting general remedies.

The evidence on the localizing conditions of cholera given in the report of Dr. Sutherland (which is, as I have stated, an abstract of the reports of the Medical Inspectors) points to the following as among the more prominent of the removable causes of zymotic disease :—

1. Open ditches used as sewers.
2. Want of sewers.
3. Badly constructed sewers, accumulating deposits and generating sewer gases.
4. The pollution of the atmosphere in streets and within houses from untrapped gulleys and drains, and from sewer-ventilating openings in streets.
5. Cesspools accumulating and retaining excrementitious matters close to and under dwelling-houses, whereby the air is contaminated and the subsoil saturated with filth.
6. Want of house drainage.



7. Improperly constructed house drainage.
8. Defective paving in alleys, courts, and back yards.
9. The absence of any organized daily system of cleansing, and the consequent retention of house refuse in and near dwellings.
10. Bad water, badly distributed.
11. Recurring nuisances.
12. Unwholesome trades, such as private slaughter-houses in crowded localities, bone boiling and crushing, manure making, and other trades evolving vapours containing organic and other noxious matters.
13. Unwholesome vapours exhaled from the Thames, in consequence of the water being polluted by the sewage of the metropolis.
14. Structural defects of dwelling houses, such as houses built in rows, back to back. Cellar habitations. Neighbourhoods the houses of which are closely packed together, with narrow overcrowded streets, alleys, and courts so constructed as to prevent ventilation. Houses absolutely unfit for human habitation. Filthy, unventilated, and overcrowded houses, let to tenants by the week or for other periods less than a year.

Lastly, and applying to all these,

15. Multiplicity of local authorities, and the want of sufficient powers in such authorities to deal with these evils.

Great as these evils are in London, they are not greater, in comparison to the extent of the metropolis, than in other large cities and towns, and there is not one among them that cannot be remedied if proper steps be taken.

The first and most obvious necessity in the metropolis is to sweep away the existing chaos of local jurisdictions, and to constitute Local Boards of Health for the metropolitan districts, with the most ample powers to deal with the evils described. All the details of local works might be left in their hands, as in towns under the Public Health Act; but as there are questions with which Local Boards could not so well deal, such as the purification of the river, opening main lines of streets, laying down main lines of sewers, water supply, &c., these might be placed under the jurisdiction of a metropolitan Board of Works, as suggested in the report of the Commissioners on the Corporation of London last year.

Of all questions that can come under the consideration of the metropolitan authorities, none exceeds in importance that of water-supply.

That the present supply of the metropolis is defective, both in quality and mode of distribution, is hardly contested. The Water Supply (Metropolis) Act of 1852 will, no doubt, lead to great improvements.

I would submit, on this point, that when the period arrives at which the Act requires that the works for the improved supply are to be completed, an inquiry should be instituted, embracing two points,—

1st. How far the companies have complied with the Act; and

2dly, How far the improvements rendered compulsory by the Act have given to London a supply satisfactory both as to quantity, quality, cost, and distribution.

I have prepared a Bill, framed with a view to supersede the existing Acts for the removal of nuisances.

That Bill is before the House of Commons, and I need not set out its provisions here. They are based on necessities widely and deeply felt, and provide remedies much wanted for most serious evils. That measure is intended to be of general application, and to be in force where the Public Health Act is in operation, as well as where that Act has not been applied. I have also introduced a Bill for amendment of the Public Health Act. It has been framed with a view to supply those defects of the present measure which the experience of six years has brought to light, and to give to communities a means of providing a machinery for their own improvement without the cost, difficulties, and delays which attend the procuring of a Local Improvement Act.

I have the honour to be

Your Lordship's obedient Servant,

B. HALL,

President of the General Board of Health.

*The Right Honourable  
Viscount Palmerston.*

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*Whitehall, December 30, 1854.*

SIR,

IN compliance with the request of the President of the General Board of Health conveyed in your letter addressed to me on the 26th October, I beg to transmit the accompanying report on the Epidemic Cholera, as it prevailed in the Metropolis in 1854, embodying an abstract of the reports sent in by the Medical Inspectors who had charge of the different Parishes and Unions.

I am, Sir,

Your obedient Servant,

JOHN SUTHERLAND.

*T. Taylor, Esq.,*

*Secretary,*

*General Board of Health.*



## REPORT.

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As the Medical Council has been charged by the President of the General Board of Health with the duty of preparing a report on the late Epidemic Cholera, having special reference to scientific inquiries and discussions, it will not be necessary for me to do more, in the present report, than state as briefly as possible (chiefly from the reports of the Medical Inspectors) the extent of the epidemic; the localities principally affected; the more obvious localizing causes of the disease; the measures adopted under the Nuisances Removal and Diseases Prevention Act, and the regulations of the General Board of Health issued under that Act, for mitigating its ravages; with the defects in existing powers and authorities which have been rendered evident by the result of the experience obtained in putting the provisions of the Act in force.

### SECTION I.

#### *The Epidemic, the Localities chiefly affected, and the Steps taken by the General Board of Health.*

The epidemic of 1854 is the second outbreak of cholera which has occurred in the metropolis since the epidemic of 1849. In the autumn and winter of 1852, a number of suspicious cases occurred in various districts of the metropolis; and in consequence of this I was directed by the General Board of Health to make a special inspection of the epidemic localities on both sides of the river, and to report on their condition. These reports were printed and circulated for the information of the local authorities.

No deaths from cholera were registered during the month of January 1853. There were two deaths in February; two in March; six in April; one in May; three in June; and eighteen in July. During the subsequent four weeks of the month of August the mortality was 4, 10, 18, and 16. In the four weeks of September the deaths were 7, 16, 29, and 47. During October the epidemic progressed, the weekly mortality rising to 66, 45, 83, and 99. The outbreak reached its maximum on the first week of November, on which week the deaths from cholera were 102, and during the following weeks the mortality fell to 98, 72, 46. In December the deaths declined week by week to 28, 13, 11, and 10, on the week ending the 31st.

During the epidemic outbreak of 1853 the current weekly mortality from diarrhoea, a disease which prevails in the metropolis through

all seasons and temperatures, rose along with that from cholera. It declined with it also, and continued to occasion its usual mortality from the beginning of 1854, until the cholera appeared in an epidemic form in the month of July; the deaths throughout this period varying between 10, the lowest, and 38, the highest number of deaths per week.

During the earlier part of the year 1854, cholera had nearly disappeared, but there were occasional deaths registered. These amounted sometimes to one, sometimes to two a week, while none were registered for several consecutive weeks. The total deaths from cholera from the 1st of January till the 1st of July of the present year amounted only to 16. The cases appear, many of them, to have been aggravated forms of diarrhœa or English cholera, occasionally followed by consecutive fever, but generally continuing for a longer period before death than usually happens with Asiatic cholera.

Sometimes the cases were more rapid in their course. One of the earliest of these rapid cases occurred at Fulham, on the 20th May. In this instance death ensued in 15 hours after the time of attack. The usual interval between seizure and death was from 24 to 36 hours.

The following are the dates and residences of the 16 fatal cases which occurred during the first six months of the present year.

|              |   |                               |
|--------------|---|-------------------------------|
| 10th January | Periwinke-street, Stepney                   | - Choleraic diarrhœa.         |
| 12th     ,,  | - High-street, Notting-hill                 | - Cholera infantum.           |
| 18th     ,,  | - Camden Town                               | - Cholera.                    |
| 28th     ,,  | - Ship Emma, off Wapping                    | - Cholera.                    |
| 4th February | Charles Street, Hackney-road                | Cholera.                      |
| 3rd April    | - Prospeet-place, Whitecross-street         | - Choleraic diarrhœa.         |
| 4th     ,,   | - Hardin's-lane, Woolwich                   | - Cholera.                    |
| 13th     ,,  | - Baynes'-row, Amwell                       | - Cholera Anglica.            |
| ,,     ,,    | - Workhouse, Islington                      | - Cholera, consecutive fever. |
| 15th     ,,  | - Dales'-place, Spitalfields                | - English cholera.            |
| 19th     ,,  | - Crow-lane, Fulham                         | - Spasmodic cholera.          |
| 26th     ,,  | - Workhouse, Mile-end New Town              | - Cholera.                    |
| 27th     ,,  | - Rich-street, Limehouse                    | - Spasmodic cholera.          |
| 8th June     | - Crown-street, St. Margaret's, Westminster | - Cholera.                    |
| 16th     ,,  | - Mill-lane, St. Paul's, Deptford           | English cholera.              |
| 17th     ,,  | - Cash's-ground, St. Saviour's              | - Cholera.                    |

These facts prove that the late epidemic, like that of 1849, was ushered in by a number of sporadic cases, scattered over the metropolis before the great outbreak took place.

During the whole of the first six months of the present year, there were a few deaths weekly from dysentery, the highest number being seven.

The mortality from typhus fever varied from 40 to 64 a week during the same period. The highest number of deaths from this disease occurred in the beginning of October, when 88 persons



died in one week. The whole class of zymotic diseases proved fatal to between 200 and 300 persons a week till cholera became epidemic, and the maximum mortality from the zymotic class took place on the week of the maximum mortality from cholera. During that week ending September 9th, no fewer than 2,558 inhabitants of the metropolis died of a class of diseases the ravages of which might be very greatly mitigated, if not prevented, by the adoption of measures for protecting the public health.

Cholera became epidemic in the metropolis early in July. No death from the disease had occurred from the 17th June. But on the 5th July, a female infant, six months old, died of "choleraic diarrhœa," in Belvoir-terrace, St. John's, Westminster, after an illness of 24 hours duration.

This case was followed by a number of fatal cases occurring in various districts of the metropolis.

On the 7th July a child died in South Chelsea. On the 8th there was a fatal case in Rotherhithe, and another in St. George's-in-the-East, in which death ensued in 12 hours. On the 9th a seaman died on board ship off Bermondsey, after 16 hours illness. A fatal case occurred in Marylebone on the 12th, another at Brixton on the 14th, and another in Shoreditch parish on the 15th.

During the ensuing week there was a rapid and progressive increase of the epidemic.

On the 16th July there were four fatal cases in Greenwich, St. George's Southwark, Poplar, and Spitalfields.

On the 17th a death took place in Chelsea, and another in Holborn Union.

There were three deaths on the 18th in St. Pancras, Bromley, and Bermondsey.

There were six deaths on the 19th, one in each of the following places,—Chelsea, Hackney, Hoxton, Limehouse, Battersea, Bermondsey.

On the 20th there were five deaths in Poplar, Lewisham, Lambeth, Whitechapel, and St. Olaves.

On the 21st a death took place in Holborn Union, two at Limehouse, and one at Bromley.

There were seven deaths on the 22d,—one in Limehouse, another in Chelsea, a third in the Savoy, and the remainder in St. George's-in-the-East, Camberwell, Rotherhithe, and one on board the Dreadnought hospital ship.

The epidemic by this time had shown its presence over the whole of the metropolis, and during the week ending the 29th July there were 133 fatal cases of cholera, and 84 fatal cases of diarrhœa. There was a rapid increase of the epidemic in the course of the month of August, and it reached its acmé in the second week of September, almost on the same day on which the epidemic of 1849 occasioned the highest mortality. There was indeed a remarkable similarity throughout in the progress and decline of both epidemics. On the week ending the 9th September there were 2,050 deaths from cholera, and 276 deaths from diarrhœa. The epidemic attained its

maximum in nine weeks, but it declined more slowly than it advanced, for the mortality did not fall to that of the first week of the epidemic until 13 weeks after the maximum period. During the advance of the cholera, there was a corresponding increase of the mortality from diarrhœa. Both forms of the epidemic attained their maximum mortality at the same time, and both declined together.

Table I. in the appendix gives the weekly statistics from the beginning of 1854 till the decline of cholera. Assuming the 1st of July as the commencement of the epidemic and the 16th December as its termination, the following table will represent the total mortality from cholera, diarrhœa, typhus, and other zymotic diseases, as contrasted with the mortality from all causes.\*

| Deaths.  |           |         |                       |             |
|----------|-----------|---------|-----------------------|-------------|
| Cholera. | Diarrhœa. | Typhus. | All Zymotic Diseases. | All Causes. |
| 10,675   | 2,601     | 1,347   | 19,413                | 40,599      |

Although there were deaths from cholera over the whole of the metropolis, the mortality was very unequally distributed.

On the north side of the Thames among a population of 1,745,701 (at the last census) it was 4,948, or one death from cholera to 353 inhabitants, while on the south side of the river the deaths out of a population of 616,635 amounted to 5,729, or in the proportion of one death to every 108 inhabitants. The mortality on the south side was thus above threefold, in proportion to the population, what it was on the north side of the river.

The mortality in the districts north of the Thames was by no means equally distributed, but was generally speaking greatest on the lowest levels, with one marked exception, namely, the virulent outbreak of cholera in part of the parish of St. James, Westminster, which I shall make the subject of a separate report.

Table II. in the appendix gives the population and deaths from cholera during the epidemics of 1832, 1849, and 1854 for each parish and union of the metropolis. This table exhibits a considerable variation in the relative mortality of the two last epidemics in the same districts; and making every allowance for partial local improvements, it confirms the observation made during the epidemic of 1848-49, namely, that although localities presenting certain defective sanitary conditions are the special seats of cholera, such localities sometimes escape, or are not always attacked with equal severity.

The facts now stated will account for the greater attention which the General Board of Health directed to certain parts of the

\* Besides the deaths from cholera given in the table, there were 3 deaths registered on the week ending December 23d, and 2 deaths on the week ending the 30th. The total mortality from cholera during the year 1854 was therefore 10,696.



metropolis than to others, and in doing so the Board was guided by the experience of former epidemics, which in the main has been confirmed by the experience of the one which has passed away.

I next proceed to state the steps taken by the General Board of Health.

In consequence of the severe outbreak of epidemic cholera in Newcastle-on-Tyne in the month of September 1853, an Order in Council was issued on the 15th of that month, putting in force for six months the Diseases Prevention Act, and authorizing the General Board of Health to issue rules and regulations for the mitigation of the epidemic.

These regulations were issued on the 20th September and 12th October 1853, and sent with an instructional letter to all the parochial authorities in the kingdom. The order in Council was again renewed on the 18th March 1854, and the regulations were re-issued on the 24th of the same month.\*

By these regulations the local authorities were directed to carry out such sanitary measures of a temporary nature, as might remove the more obvious localizing causes of epidemic disease.

They were directed to prepare lists of epidemic localities in their parishes or unions; to cause these localities to be examined; to take steps for placing them in as healthy condition as possible by enforcing the removal of all accumulations injurious to health; to see to the cleansing of streets, courts, and alleys, the cleansing, lime washing or fumigating of filthy or infected houses; and they were also directed to provide places of refuge to which persons might be removed from infected houses or neighbourhoods.

The Guardians of the poor were further required to provide sufficient medical attendance for the sick, to open dispensaries for the gratuitous distribution of medicines, and to employ house-to-house visitors for the discovery and treatment of cases of cholera and diarrhoea, which might otherwise prove fatal through personal neglect.

At the end of last and the beginning of the present year Dr. Milroy was requested to re-inspect the worst portions of certain parishes in the metropolis, and to communicate personally with the local authorities as to the propriety of instituting precautionary measures.

The General Board of Health followed up these proceedings by drawing out and circulating among the local authorities a minute of instructions, (subsequently revised and confirmed by the Medical Council,) in which a most careful detail was given of every step required for protecting the public health and for saving life. The proceedings to be taken for improving the sanitary condition of epidemic localities were given step by step. The whole plan of organizing the medical relief of affected parishes was laid down with precision, and it was anticipated that very little interference on the

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\* A new set of regulations, containing in the main the same provisions, though in a briefer form, were issued by the President of the present Board on the 8th and 14th Sept. following.

part of the Board with the proceedings of local authorities would be necessary in future.

Such was the position of matters when the constitution of the General Board of Health was changed by the Act of last session.

The President of the newly-constituted Board came into office on the 12th of August, and finding that the epidemic by that time was progressing rapidly, he on the same day issued a circular letter to all the Boards of Guardians of the metropolis offering the assistance and advice of the Board through its Medical Superintending Inspectors to any Boards of Guardians who might require it.

To this circular a number of replies were sent in. Several Boards accepted the offer of advice; a number of others gave unsatisfactory accounts of their proceedings; several declined assistance on the ground that they were doing all that was necessary, and from some Boards no answers were returned.

Of the few Boards who accepted assistance the majority were not those of parishes which suffered much from the epidemic, and in one or two instances of severely affected parishes, the advice asked for and given was not acted on.

The epidemic during this period continued to advance rapidly, and seeing that there was no appearance of any efficient measures for protecting the public health of the metropolis being in operation, the President determined to appoint a number of Medical Inspectors to visit all the parishes most severely affected, and to inquire what really was being done. This was on the 31st August, and on the 2d September the inquiry was commenced.

A circular was sent to the vestry clerks of the parishes requesting that meetings of Guardians might be held at a time specified to receive the Inspectors, the notice being as short as possible. Lithographed instructions were put into the hands of each Inspector, by which he was directed to make inquiry as to the extent and efficiency of the preventive measures in each parish as laid down in the Regulations and Instructional Minute of the General Board of Health. He was to visit the infected localities and inquire into the local causes which might appear to have determined the outbreak of the epidemic. He was to see whether the cleansing and removal of nuisances required by the regulations had been done; whether there was sufficient medical attendance for the sick; he was to urge in the strongest manner the necessity of medical house-to-house visitation being carried out, and a sufficient amount of dispensary relief being provided. He was also to see whether proper houses of refuge and hospital accommodation existed, and whether all of the measures of relief in the affected districts had been duly organized. The Inspector was also instructed to report any deficiencies in the existing arrangements, and such additions and improvements as might be requisite. One special head of the inquiry was to ascertain the state of the water supply in the southern districts of the metropolis, on account of serious complaints having been made against it. The work was done so quickly, that in four days the whole of most infected districts of the metropolis were placed under



the supervision of Medical Inspectors. Each Inspector was directed to report as soon as possible, and day by day.

The reports were sent in to the President generally every day, who immediately minuted his instructions on the back of each report, and directed the Inspector to return to his district and to state the wishes of the President to the local authorities, urging them at the same time to adopt the steps required for saving the lives of the people.

The object of the entire procedure was to aid the local authorities without interfering with their freedom of action, and to lead them to fulfil the obligations imposed on them by the Statute without resorting to any attempts at compulsion by means of provisions under which the President was advised that the directions could not be enforced.

These minute proceedings were continued from day to day as long as the severity of the epidemic appeared to render it necessary, and in cases where the authorities would not do their duty, the President directed the Inspector to call for inquests on the bodies of any persons who had died from neglect. In a number of instances this course had to be threatened to secure compliance, but in only one case was it taken. This happened in Clerkenwell, where several lives had been sacrificed in consequence of neglect of the Board's regulations.

The following were the arrangements of parishes under the different Inspectors:--

|                      |   |   |  |
|----------------------|---|---|--|
| Dr. Hassall          | - | - | Lambeth.<br>Wandsworth Union.  |
| Dr. Headlam Greenhow | - |   | St. Mary, Newington.<br>St. George the Martyr.<br>St. Saviour's, Southwark.                  |
| Mr. Walsh            | - | - | Bermondsey.<br>St. Olave's.<br>St. John and St. Margaret<br>Westminster.                     |
| Dr. Mortimer Glover  | - |   | Rotherhithe.<br>Greenwich Union.   |
| Dr. MacLoughlin      | - |   | Stepney Union<br>Poplar Union.<br>St. Andrew, Holborn.<br>St. Giles & St. George Bloomsbury. |
| Dr. Richard King     |   |   | Shoreditch.<br>Whitechapel.<br>St. Luke's, Middlesex.<br>Hackney.                            |
| Mr. George Glover    |   |   | Bethnal Green.<br>St. George-in the-East.<br>Islington.<br>Clerkenwell.                      |
| Mr. Patterson        | - | - | The Strand Union.<br>St. James, Westminster.<br>St. George, Hanover-square.                  |
| Dr. Fraser           | - |   | Chelsea.<br>Paddington.  |

Some slight alteration in these districts was made to suit circumstances. Part of Dr. Fraser's district was transferred to Dr. Greenhow, in consequence of Dr. Fraser having been directed by the President to undertake a special house-to-house inquiry into the circumstances connected with the violent outbreak of cholera in part of the parishes of St. James Westminster, and St. Ann Soho. Dr. Hassall also visited Fulham, and inspected the parish of St. Martin's-in-the-Fields. In addition to these arrangements for the inspection of the parishes, Dr. Gilbert King, Inspector of fleets and hospitals, was directed to inquire and report on the state of the river and shipping, with the view of organizing suitable measures for the treatment of the premonitory stages of cholera on board ship.

It was not considered necessary at that time to institute any inquiry by inspection within the City of London, or in the large parishes of St. Pancras or Marylebone, because the epidemic had visited them with comparative lightness, and moreover the President had reason to be satisfied with the activity of the local authorities and with the proceedings taken by the local sanitary committees.\*

At a later period Mr. Walsh was directed to visit these parishes, and reported favourably on their arrangements for meeting the epidemic in its then intensity. Reports of a similar nature were received respecting the parishes of Islington, Hackney, St. George Hanover Square, and Paddington; and hence the attention of the Inspectors was mainly directed to the parishes where the disease was most prevalent. I had myself previously met the Guardians of Kensington and Fulham, who agreed to carry out the necessary measures of precaution.

Besides the inquiries connected with the sanitary condition of affected districts, and the measures of protection in operation, the Inspectors were also directed to report any instances of improved sanitary arrangements they might meet with in their districts, and the effect of those improvements on the health of the inhabitants.

The Inspectors' reports on the whole epidemic in the metropolis being now before me, I shall next present as brief an abstract of them as possible, arranging the materials regarding all the parishes under a few heads.

## SECTION II.

### *Sanitary Condition of Localities affected by Cholera and Diarrhœa.*

All the inspectors agree in stating as the result of their experience that in those districts where cholera had become localized, they found it connected with obvious removable causes.

The chief place among these local causes is assigned to the state of the drainage, especially in the flat, low-lying districts south of the

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\* The voluntary exertions of the Local Board of Health of Regent-square church district, St. Pancras, headed by the Incumbent, are worthy of the highest commendation, as affording an example of how much good may be accomplished, even in the present defective state of the law, by vigilance and well-directed effort.



Thames, and in part of Chelsea and Fulham. In all of these parts of the metropolis, there are large masses of population dependent for their drainage on open ditches, tidal ditches, old badly constructed sewers, and still worse house drains, the result of the whole being that the excreta of a large part of the metropolis are not conveyed away, but are left to putrify and rot in the open air, in cesspools under houses, or in large underground sewers, always generating foul gases, which are poured out into the streets, or into the houses, while in the more open districts, the exhalations from the ditches keep the atmosphere in a constantly malarious condition.

*Open Ditches.*—The reports of the Inspectors contain numerous illustrations of the effect of these causes in predisposing the people to attacks of cholera; and it is worthy of remark, that the exhalations from open ditches, so much complained of at the present time, occupied a prominent position among the causes to which in former days the sweating sickness was attributed.

In describing those which traverse the Borough and Newington, Dr. Greenhow says,—

“The tide flows for several miles up some of these ditches bearing with it the excreta of the inhabitants of the lower district, but carrying with it, in its recession, only a small proportion of the noxious substances it meets in its course, the greater part remaining in the form of black organic mud, which is exposed by the ebbing of the tide for many hours daily to the influence of the atmosphere.

“It is by no means surprising that such a district should be one of the unhealthiest in London, that fever should there find a permanent resting-place, and that pestilence should select the locality as one of its most favorite haunts.”

The following illustrations of their effects on the public health are given:—

Great Western-terrace, Kensall New Town, consists of ten or twelve cottages with gardens in front. There was no apparent cause of disease in this case, except that in front of the houses runs an open ditch passing into an open sewer. A good deal of diarrhoea, and several deaths from cholera, took place in these houses.

Dr. Fraser mentions an instance, in this same district, of five deaths having taken place in three houses. Behind one of those houses ran a foul ditch which receives the drainage of a number of privies. In a cottage nearest this ditch two persons died. The remaining three deaths were those of labourers living at a greater distance from the ditch, but who had worked in the field through which it passed. They had all complained greatly of the stench from it up to the time of their being taken ill.

Open ditches, used as sewers, are common in all the parishes that were under Dr. Greenhow's inspection.

He says, “wherever these ditches are used as sewers, more or less cholera appeared in any houses sufficiently near to be affected by the exhalations, and it was remarkable to observe the inhabitants of the neighbouring streets visited by the epidemic in nearly exact proportion to their proximity to the ditch.”

One of these open tidal ditches runs behind Bath-terrace, Newington. All along the course of the ditch cholera has been prevalent.

Running parallel with this ditch is Devonshire-place, containing 16 houses and 114 inhabitants. Of this number 12 persons had cholera, and six died, while 68 of the remaining inhabitants had diarrhoea. All the cholera cases, and nearly all the diarrhoea, took place in the houses abutting on the ditch.

A similar stagnant ditch passes behind Clandon street. In five consecutive houses nearest the ditch, containing 30 persons, 10 had cholera and nine died.

These ditches are constant sources of typhus, in houses in their vicinity, and “a continual cause of parochial expenditure.” Their injurious influence is stated to be “in direct proportion to their stagnancy, the smaller and more sluggish branches being infinitely more “noxious than the larger.”

The parish of Fulham suffered severely from its open ditches.

Dr. Fraser, who examined into the causes of the fatal outbreak of cholera in Camberwell Workhouse, in addition to causes connected with the building itself, lays particular stress on the sanitary condition of the locality in which the workhouse is situated, and the vitiation of the air in the district by emanations from open ditches, piggeries, and other nuisances. He says there are not only local causes “enough to account for the outbreak of cholera, but to create “surprise that malignant epidemic disease should ever be absent from “the district.” These foul ditches “traverse the neighbourhood in all directions, receiving the contents of the open privies.” A street, called Harris-street, skirts one of them. This ditch receives privy soil and other refuse matter, and also the blood, dung, washings, and no small portion of the offal of a large slaughter-house. The blood from the slaughter-house coloured the ditch to a considerable distance, and the smell from it was most offensive. The people in Harris-street are generally obliged to keep their doors and windows shut in consequence of the stench. In that street, which consists of 20 houses, there were a large number of cholera cases, and in several of the houses there were two, three, or four deaths from the epidemic.

In this and some neighbouring streets, about 50 houses are dependent on a solitary pump for their water supply. This pump is sometimes dry, and the people are “days without water.”

*Structural Defects in Streets and Houses.*—Dr. Greenhow, in describing the general sanitary condition of the houses in the districts under his inspection, states, that a great evil in these districts is, a total absence of any comprehensive plan of laying out ground for building purposes, and the neglect consequently of all arrangements for ensuring a free circulation of air round dwelling houses, and the existence of numerous narrow overcrowded courts and alleys, many of them mere *cul de sacs*. In one such court 12 per cent. of the inhabitants died of cholera in a few days, and most of the survivors had to be removed.



Another great evil is the existence of so many houses built back to back, with doors and windows only in front; with a dead wall behind, and no means of thorough ventilation. These houses are a constant cause of disease.

Dr. Hassall has made a similar complaint as to these back to back houses.

In all the poorer class of dwellings the means of ventilation are described as defective in the highest degree, and much disease and poverty result from the defect. The improvements already completed in dwellings for the labouring classes, show that the ventilation may be made sufficient even in the worst class of cottage property.

Cellar dwellings are stated to be still in use in many parts of the metropolis, contrary to the provisions of the Metropolis Buildings Act, 1844, as appears from the Parliamentary Paper No. 10, dated 14th December 1854. They ought to be abolished forthwith.

The smaller and poorer streets and courts are generally kept in bad repair. The gutters are stated to be badly constructed, and to retain foul water before the doors of the houses. The pavement of courts and alleys is in general very defective.

Mr. George Glover directs special attention to the condition of the dwellings in cholera localities. He describes the accommodation as wretched and confined; the houses overcrowded, ill ventilated, and badly lighted; the privy accommodation deficient; and the houses themselves intermingled with private slaughter-houses, cow-houses, stables, pigsties, and public privies.

*Cleansing.*—The wide open thoroughfares in the cholera localities are generally, though not always, well swept. The narrow back streets are very imperfectly cleansed, and the courts and alleys “entirely neglected at ordinary times.”

Dr. Greenhow states that, in his districts, there appears to be no organized system for removing house refuse, and it hence accumulates in the back yards of the poorer class of property, so as to be injurious to health. The poor complain bitterly of neglect in this particular.

Mr. George Glover says that “the general paving and cleansing of the parish of *Bethnal Green* are very bad.” They are both entrusted to one Inspector, who has various other duties to perform, and both are “sadly neglected.”

Dr. Hassall states that the cleansing in some parts of Lambeth parish is so ill attended to, that for a period of nearly two months there was no dust contractor, and that in many cases the dust, along with refuse organic matter of all kinds, was not removed for several weeks during the prevalence of the cholera.

He states, also, his opinion that the legal process for abating nuisances is too tedious during the prevalence of a severe epidemic, and that some more summary method is required.

He states, that it has frequently happened that nuisances which the Inspectors have taken in hand at the commencement of the out-

break of cholera have not been removed until after the epidemic has ceased in the neighbourhood.

*Sewerage.*—The Inspectors agree in stating that the sewerage of all the localities is in a most imperfect condition. Many streets are unsewered. In others the sewers are imperfectly constructed, and become choked up with deposit which evolves the most noxious exhalations. Dr. Greenhow gives the following illustration of this fact.

“ Dr. Jones, a member of the St. Saviour’s Board of Guardians, informed me at one of the meetings that a bad smell from a sewer close to his surgery having caused much annoyance, he made application for its cleansing. That although the original capacity of the sewer had been considerable, a waterway of six inches only was open, and that 200 loads of soil and mud were removed from the sewer in the space of a very few yards.”

It is also stated by Dr. Greenhow that a new sewer had recently been constructed in Guildford-street, St. Saviour’s, but that the old one, which was nearly choked up, had been left pretty much in that condition. This old sewer runs under the foot-pavement on the north side of the street, and out of 22 deaths from cholera in that portion of the street, 14 took place in the houses on the north side, close to the old sewer.

Another great sanitary evil, incident to the districts south of the river, is stated to be the reflux of the tide through the sewers at high water.

In some parts the tide fills the sewer and rises in the gully grate up to the level of the street, having previously forced the sewer gases into the public streets, or through the drains into dwelling-houses.

Not unfrequently the basements of houses are flooded from the same cause.

The sewer water so pent up is forced through the sides or openings of the sewer into the sub-soil, and produces malaria over large districts, the effect of which, Dr. Greenhow says, is shown by the marks of miasmatic poisoning in the countenances of the inhabitants.

Dr. Greenhow adduces evidence of medical practitioners and members of Boards of Guardians, to show that house drains are often not trapped, and that disease is produced by sewer gas passing into the houses. Want of trapping is said to arise frequently from surreptitious connexions being made between the house drains and sewers by unskilful persons, and thus the advantages of drainage are converted into direct causes of disease.

The method of ventilating sewers by untrapped gully grates and open grates in the middle of the street, is condemned as directly injurious to the public health, and many cases of cholera both during the late and previous epidemic are stated to have occurred near these apertures. So long as the present imperfect sewerage exists, some efficient system of ventilation is absolutely necessary.

Dr. Greenhow describes the present system of ventilation by street gratings as “most pernicious.”



Dr. Hassall states, that the drainage in the districts under his inspection is very defective, many streets and roads being without any sewers ; that the sewers in most cases do not empty themselves properly of their contents, but allow of their deposition and accumulation. Until these evils can be remedied, he conceives that some means of removing the unwholesome gases continually generated from the sewers are indispensably necessary.

Mr. George Glover states that in all the parishes under his inspection the sewerage is bad, and in fact in the greater portion of some of them there are no main sewers at all. The general deficiency and defective nature of the sewerage and house drainage of the narrow streets are notorious.

*House Drainage.*—Dr. Greenhow appears to have taken considerable pains to estimate the effect of the present condition of the sewerage and drainage of the metropolis in predisposing to cholera. He states, that it is difficult, where so many causes of insalubrity exist, to decide which is the most powerful in localizing the disease; that he directed his most earnest attention to the subject, and that whilst admitting that bad water, improper food, want, fatigue, depressing passions, bad health, and especially the existence of other diseases, powerfully predisposed individuals to attacks of cholera, the effluvia arising from collections of night-soil were by far the most influential. In certain cases, the atmospheric contamination arising from noxious trades appeared to have proved injurious, but, in by far the larger number of cases, direct vitiation of the air by open privies or by drains was obvious. The occurrence of disease from these latter causes, he states to be exceedingly common in the cottages both on the south side of the river and at Chelsea.

“The privies are most commonly untrapped, and placed over cess-pools, or drains which seem to act as such.” The privies are “most frequently situated in an extremely small back yard, often built against the main wall of the house or wash-house, through the foundations of which, after a time, the night-soil percolates, until it penetrates into the sub-soil below the living apartment,” or the privy is within three or four feet of the back door. Sometimes untrapped privies are actually situated inside houses. Where a privy has been common to a number of houses, it has repeatedly happened, that the occupants of the house situated nearest to it have alone suffered from the pestilence.

The effect of exhalations from badly constructed sewers was also observed to be highly injurious. Houses, in all other respects clean and wholesome, have suffered from the entrance of the sewer gases through untrapped drains and sinks. “In a great many cases, open gully-holes in the streets have exercised a like baneful influence on the internal air of houses.”

“Sometimes ruinous drains pass close to the walls of houses, and the effluvia from them, penetrating through chinks into the basement, rise from thence by the interstices of the floor to the apartments above.”



*Mischievous Results of Drains passing under Houses.*—The passage of drains underneath houses is stated by Dr. Greenhow to be a not less fruitful source of mischief. “Even when well constructed, this is a great evil, as the slightest imperfection in the joining of the pipe may lead to the most disastrous consequences.” This is still worse when drains are roughly made of bricks, often only covered by flags or by the boarding of the floor. Houses drained in this defective manner entail “continual ill health among their inmates, with almost the certainty of the cholera should it arrive in the district.”

As an illustration of the effect of these causes of disease, Dr. Greenhow states the following facts:—

In Suffolk-street, in the Borough, there were deaths from cholera in 20 houses. In these houses, up to the 23d September, there had been 29 cases of cholera, and at least as many of diarrhœa requiring medical treatment, and 24 deaths. Not far from these houses, there are bone-boiling establishments, eat-gut manufactories, knackers’ yards, the smells from which were much complained of, and besides the smells, no other cause of disease could be detected in three out of the 20 houses. In 11 houses there were untrapped sinks or privies, either within or in such close proximity to the houses as to pollute the air indoors. In one house there was a watercloset on the first floor communicating with a cesspool underneath the shop. In another, there was a cesspool for house-slops in the back area, covered with boards, and a contrivance to pump the liquid up into the yard, from whence it ran into the sewer. In another case, a brick drain ran beneath the house; the privy in the back yard was exceedingly offensive, and there were two untrapped sinks. In one house the privy was built against the kitchen wall, and the yard was undermined by rats so as to afford free egress to the effluvia from the drains. In another case, there was a most offensive untrapped gully immediately in front of the house. It is remarkable that the inhabitants themselves had, with few exceptions, overlooked these local causes of disease, and attributed the cholera solely to the unwholesome trades. Dr. Greenhow examined a number of houses in Suffolk-street, in which there had been no illness, and found their sanitary condition good.

The outbreak of cholera in Lant-street is referred by Dr. Greenhow to similar causes. There were deaths in 12 houses. In these houses there were about 100 inhabitants, of whom 19 had cholera, and above 20 others diarrhœa; 16 out of the 19 cholera cases proved fatal. In this instance, also, the drains passed beneath several of the houses. In one house, a foul and offensive privy was built against the kitchen. In another there is an untrapped sink close to the back door. In the other houses there were similar unhealthy conditions.

Another instance is given of four houses in Swan-street, in three of which the drains passed beneath the houses, occasioning nuisances and producing fevers among the inmates. These houses suffered from cholera and diarrhœa, but the fourth house, the drain from

which did not pass beneath the floor, escaped the epidemic altogether.

Both inhabitants and proprietors expressed a strong desire that this most injurious and dangerous manner of draining should be discontinued, and the sullage removed without passing under the houses.

These illustrations are taken, not from the worst streets or houses, but from the dwellings of respectable tradespeople in comfortable circumstances.

*Privies and Cesspools.*—Numerous examples of the dangerous results of effluvia from open privies in the small yards of cottages came under Dr. Greenhow's observation, from which the following instances are selected:—

In a house in Down's-buildings, Christ-church, two cases of cholera took place, one of which was fatal. There was an open privy, so situated that the effluvia permeated the house.

Two deaths occurred in a house in Queen Charlotte-court, St. Saviour's. This house had an open privy entering from the bed-room.

In a house in White Hind-alley, in the same neighbourhood, inhabited by three persons, the privy was situated under the same roof as the house. Two of the inmates suffered, one from diarrhœa and the other from cholera, which proved fatal.

Close to a house in Moss-alley, St. Saviour's, there is situated a foul and offensive privy, and a sewer passes close to the wall of the house. Three persons in this house died of cholera.

Great Bland-street, Newington, is a broad, airy, good-looking street, inhabited by respectable people. One of the houses is of a superior class, clean and unexceptionable, but it has an open privy over a cesspool, built against the kitchen wall. There is no drainage, and most of the cesspools in the neighbourhood were overflowing. The house in question was inhabited by five inmates, four of whom died of cholera.

A house in Lombard-street, St. George the Martyr, had its drains choked and offensive, with a foul privy opposite the back door. Two children, who occupied a room overlooking this privy, died of cholera.

There is a house in Swan Court, in St. Mary, Newington, against the gable wall of which there are several privies erected. Two persons in this house died of cholera, and two others had diarrhœa. In this instance, it is said that the soil from the privies had percolated through the wall, and infiltrated the earth below the flooring of the house.

A single death from cholera took place in White-street, in the Borough. This house had a water-closet within three feet of the back door, underneath which there is a large cesspool, receiving the drainage of several other houses, and the smell at times is overpowering.

In a small market garden, by the side of Kensall-road, Kensall-green, is a cottage, well isolated from every other dwelling. There is



no cause of disease near it, except an open privy, with a cesspool constantly full, immediately behind the house; and there is a rude brick drain passing underneath the cottage, and conveying the overflow from this cesspool to another in front, where it is collected for manure. Of four adults inhabiting this cottage, one had diarrhœa, and three were seized with cholera, of whom one died.

Manor gardens, Chelsea, is a large open unpaved court, which has been lately drained. Some of the houses are provided with water-closets, and others have the privy connected with the drain.

There was a good deal of diarrhœa in the court, and also one case of cholera, and that not a fatal one. Every inmate of the house where this case occurred, seven in all, had diarrhœa, and this house is the only one in the court which has a cesspool.

The absence of house drainage, Dr. Hassall found to give rise to a very great evil in the houses of the poorer classes in the districts under his inspection, namely, the use of cesspools and open privies. Both of these are often overflowing, and the stench from them pervades the whole house, and indeed he says, "the air of whole streets and courts is often polluted by the emanations."

They are also a frequent cause of the contamination of shallow well water, especially in suburban and rural districts.

Among the prominent local causes of disease in Bermondsey, Mr. Walsh mentions the house drainage and sewerage as being very defective, owing mainly to the low level of the district and the necessity for damming up the sewers and ditches, except during a low state of the tide. While this defect exists, complete structural arrangements for sewerage or for general house drainage are impossible, and partial changes that have been adopted, such as filling up cesspools without sufficient water being laid on to cleanse the drains, have sometimes been complained of as of doubtful efficacy.

*Predisposing Effect of Sewer Gases.*—The effluvia from deposits in badly constructed sewers, escaping through openings into public streets and houses, are amongst the most obvious predisposing causes of cholera. A few examples of this will suffice.

Dr. Greenhow states that in Crump's-yard, Chelsea, containing several houses, there is one immediately opposite an open gully; three persons out of four residing in this house were seized with cholera, and two died.

In First-street, Chelsea, are two houses, at a distance from each other, opposite each of which there is an offensive gully grate. Diarrhœa was prevalent in the street, but there was no cholera, except in these houses. In one of them there were eight or nine cases of diarrhœa, four cases of cholera, and two deaths; and in the other, there were two deaths from cholera, and several cases of diarrhœa.

Dr. Fraser gives the following illustration of the injurious effects of emanations from a large offensive untrapped gully opposite New-terrace, Camberwell green. "In the house, No. 6, immediately facing this gully, two deaths from cholera have taken place. In the adjoining house two patients are now ill with this disease, and one has recently recovered from it in a house a few doors off."



Dr. Greenhow also mentions a case of a respectable woman being carried off by cholera, from accidentally inhaling the effluvia arising from a gully near St. George's Church, in the Borough.

A fatal case of cholera, and several cases of diarrhœa took place in a house in Garden-row, Southwark, opposite the door of which is an untrapped gully grate, to which the inmates directly traced the disease.

Five persons residing in East-place, also in the Borough, were all attacked with diarrhœa; and one of them died of cholera. The assignable cause in this case also was an offensive gully grate opposite the door.

Dr. Greenhow states that similar facts came continually under his notice in every portion of his district.

*Noxious Trades.*—The influence of noxious trades and nuisances in predisposing to attacks of cholera has been observed during the late epidemic.

Dr. Greenhow says, that complaints of these trades were very early made to him in the Borough, "and there can be no doubt," he says, "that the insalubrity of the district is much increased by their being conducted in the midst of a thick population." Dr. Greenhow met with several cases of fever in streets near the premises where unwholesome trades are carried on, and "typhus, or some other fever is rarely absent."

The following example is given by Dr. Greenhow, from the Borough. It is that of a dustman's yard, not far from Essex-street, St. Saviour's, in which there are always many hundred cartloads of dust, road-scrappings, and also night-soil. Close to this dépôt is Devonshire-square, containing 22 houses and about 130 inhabitants. The place is clean, and there are no local causes connected with the houses themselves sufficient to account for the attacks of cholera which took place.

The people complained greatly of the nuisance from the dust yard. A large proportion of the inhabitants had diarrhœa; there were about twelve cases of cholera, eight of which proved fatal. A family removed from the square and another family took the house. Three of the members of this new family immediately took cholera, and one died. A good many cases of cholera and several deaths took place in each of the other streets round the dust yard.

Another similar instance of the injurious effect of a contractor's yard in the Borough is also given.

The effluvia proceeding from filthy stables, cow yards, and pigsties are cited among the aggravating causes of the epidemic, and instances are given of whole families, exposed to their influence, having been attacked by cholera and diarrhœa, some cases terminating fatally.

Mr. George Glover says that in the parish of St. George-in-the-East there are "noxious trades in full operation, and much complained of by the inhabitants and medical men." There are 2 bone-boilers, 2 oil-boilers, 3 soap makers, 4 or 5 sugar refiners re-burning animal charcoal, 1 naphtha distillery, 4 water-proofing works, 1 candle maker, and 1 place where putrid fish are boiled. One of the worst of these

nuisances was abated by the simple expedient of passing the fumes through a furnace.

Dr. Hassall states that the chief noxious trades in Lambeth district are five bone boilers and crushers, a glue manufactory, and a dust contractor's yard on Belvidere wharf, where there is at all times an enormous collection of organic matter, including sometimes night soil, from which most offensive smells proceed.

There are other noxious trades carried on in Wandsworth, and Dr. Hassall expresses his conviction of the absolute necessity of putting a stop to these most prolific causes of disease.

The examples of specific localizing causes of cholera given in the preceding pages appear to be enough to illustrate the usual influence of these causes on the public health, and I shall therefore give a general outline from the Inspectors' reports of the localizing causes in other parts of the metropolis.

Dr. Macloughlin points out the chief sanitary defects in the Unions under his inspection as follows:—

“The great want of *Stepney Union* is proper sewerage and a proper supply of wholesome water.”

“Great complaints exist against the bad smells arising from “noxious trades, such as chemical works, bone boilers, India rubber “manufactories, and heaps of dung, dust, and putrid matter, animal “and vegetable,” which cannot be completely abated in the present state of the law.

It is stated that one of the Union guardians himself occasions a serious nuisance by collecting dung and night-soil and keeping pigs. In this instance two orders for cleansing were made, one after the other. Both were obeyed, but in a few days the nuisance was as bad as before.

Dr. Macloughlin states that diarrhoea and cholera were most prevalent and fatal in crowded localities, where the defective sanitary conditions above named were most marked.

In *Poplar Union* great complaints were urged against noxious trades, defective sewerage, and unwholesome water. These, he says, “materially injure the health of the poorer inhabitants, and “make them so liable to fevers at other times, and now to attacks of “diarrhoea and cholera.”

He mentions several instances where, from these causes and from accumulations of filth, the population has been decimated by zymotic disease. The filth was removed with only temporary benefit, for the real cause of the mischief, the sewerage and water supply, being left untouched, things reverted to their old position in a few days.

In *Holborn Union* overcrowded courts and houses were the special seats of the pestilence, and in the localities chiefly affected the great evil was again the defective state of the sewerage and water supply.

Many nuisances existed in various parts of the union, which the guardians abated so far as their legal powers would admit, but as there is no law to prevent the repetition of a nuisance the evil re-appeared a few days after it had been abated.



The local authorities of *St. Giles and St. George, Bloomsbury*, were found to be doing all they could to ameliorate the sanitary condition of the people, but having no control over the sewerage and water supply, or over unwholesome trades, they could do little that was permanently effectual.

They nevertheless appear to have exercised the powers they had with vigour. The courts of suspected districts were kept constantly lime-washed; nuisances were removed; above 400 cesspools were filled up, and improvements conducive to health were effected in upwards of 1,000 tenements.\*

Dr. Mortimer Glover describes the localizing causes of the epidemic in the parishes under his inspection as follows:—

In *Rotherhithe* the worst seats of cholera were those districts of the parish traversed by open tidal sewers, up and down which a slight tide flows from the Thames. “Most of these emit a strong smell of sulphuretted hydrogen, and along the banks of one of the worst, which I shall call Workhouse-ditch, from its close proximity to the workhouse, the most numerous and fatal cases of cholera have occurred.”

“The existence of monstrous nuisances was admitted, and the connexion of these generally with cholera, but the power of remedying them was totally denied.” The local authorities assigning as a reason that nothing effectual could be done without drainage, which they could not carry out for themselves, although perfectly willing to do so, on account of their being within the jurisdiction of the Commissioners of Sewers, from whom they could get no relief.

There were two inspectors of nuisances, but very little real good was effected notwithstanding the inspection.

In *Deptford* matters are, if possible, still worse. The drainage is exceedingly defective, and was an evident localizing cause of cholera. Dr. Glover gives an illustration of two new streets, called Commercial-road and Wellington-street, “where cholera has been most fatal.” The houses are two stories high; the ground is open around them, they seem to be houses of a superior character and inhabited by people in comparatively comfortable circumstances. But they have no drainage, and the filth of the houses is left to pereolate the subsoil.

“In almost all the places where the disease was prevalent most frightful nuisances existed, such as overflowing cesspools, slaughter-houses, piggeries, &c., along with total want of drainage.”

“It may be doubted whether there is a proper sewer in Deptford.” Dr. Glover states that the worst features of Newcastle fall short of those of New-street. “On the 2d and 3d September there were at least 40 registered deaths in this immediate neighbourhood and many died who were not registered.”

“All attempts,” he says, “to remove permanently such a state of things as there exists must prove abortive in the present state of legislation on sanitary matters.”

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\* Report of the Sanitary Committee of St. Giles and St. George, Bloomsbury.



At *Greenwich* many of the principal seats of cholera were places abounding in nuisances. In York-street Dr. Glover found above 200 people living in 20 wretched houses. In No. 5 in this street two deaths from cholera had occurred, and another was impending. Several deaths had also taken place in the immediate vicinity of this house. It was afterwards discovered that under the boarding of a room there was a depth of 10 inches of night-soil which had soaked from the adjoining privies. Dr. Glover says, "This is only one example of the many nuisances" he had observed.

*Woolwich* has a very active Local Board of Health elected under the Public Health Act, which was found doing its duty most energetically. The deaths from cholera chiefly occurred in Irish lodging-houses. In one of these houses in Rope-yard-rails there were 104 Irish. The house consisted of nineteen or twenty rooms, which had been tenanted by 120 persons previous to Dr. Glover's visit. In this house there were four cholera patients in one bed. Dr. Glover states that the smell in the house was "dreadful." "I was myself," he says, "instantly conscious as of having received a dose of poison, was ill all day, and at night had a violent attack of diarrhoea and vomiting."

Mr. Patterson, who inspected those parts of the parishes of St. James, Westminster, and St. Anne, Soho, which were so severely affected by the epidemic, describes the dwellings as overcrowded, unventilated, without any efficient house drainage; the cesspools and privies overflowing; the supply of water scanty; some of the houses so filthy and unhealthy as to be unfit for human habitation; some of the sewers of the district in a foul condition pouring sewer air through the gully grates into the streets and houses. He says there are in the district "almost every nuisance and abomination," slaughter-houses, cow-houses, boiling-houses, and other noxious and deleterious trades.

Mr. George Glover reports that the "potteries" in Kensington parish have suffered most severely from cholera. This place still retains its character for filth and disease. Pig feeding and the boiling of offal are still carried on as usual, the existing state of the law not being sufficient to enforce removal of the pigs and other nuisances. In the year 1849 the potteries contained 1,000 persons, fifty of whom died in the first ten months of the year, and of these twenty-one deaths were from cholera and diarrhoea. The population during the present year is about 1,270, and the deaths from cholera and diarrhoea have been thirty-three.

In a report on the condition of the epidemic localities in Waterloo-road district of Lambeth parish made to Dr. Fraser by Mr. Dodd, one of the union medical officers, he gives among the obvious causes of disease the sale of unwholesome food, private slaughter-houses, defective sewerage, untrapped gully grates, overcrowding of houses, and overflowing cesspools.

In a district of the Parish of St. Mary, Newington, called Loek's-fields, a report on which was sent to the General Board of Health by Mr. Kcever, one of the medical visitors, it is stated that "diarrhoea and cholera prevailed to an immense extent; and in nearly

“all cases the ravages have been greatest, if not altogether confined to those tenements, where the water was impure, the drainage bad, and the cesspools foul and offensive.”

The drainage is described as being “everywhere most imperfect.” Where the privies communicate with the drains there are no traps, and the smell is very bad at times. The street gratings, the writer says, have been in many instances complained of from want of trapping. It is also a frequent occurrence to see the water-butts placed over untrapped drains. The cesspools are often overflowing, and they were found, in some instances, saturating the ground beneath the floors of rooms.

“There seems to be no system of scavenging,” and all sorts of filth and débris “seem to remain for an indefinite period in many of the bye-streets.”

Dr. Gilbert King, who inspected the shipping on the Thames, points out in his report the foul and unwholesome state of the Thames water, from its intermixture with the London sewage. This water is used on board ship, and acts as a predisposing cause of cholera. The river banks, at low water, are in a filthy state from the same cause, and often expose the contents of privies or cesspools which have flowed from the houses. The exhalations from these pestilential banks of mud under a hot sun are most injurious to the purity of the air. Dr. King also ascribes much of the disease on board coal vessels to the dreadfully filthy condition of the sleeping quarters of the sailors, who are thus exposed to almost every cause likely to produce disease.

Mr. Glaisher has shown that Thames water contains an almost incredible amount of filth derived from the sewers, and that about four millions of gallons of water, loaded with putrescent matter, are every day evaporated from its surface within the metropolis, to be diffused through and to contaminate the atmosphere.\*

### SECTION III.

#### *The Water Supply of the Metropolis in relation to the Cholera.*

That a certain connexion exists between the use of impure water and the spread of pestilential disease is a circumstance that has been observed from the earliest times, and during the epidemic of 1848-49 it was found that the use of such water led in some instances to severe and fatal outbreaks of cholera.

In the report of the General Board of Health on that epidemic a number of carefully observed cases of this kind are given. One of these, the details of which I obtained myself, took place at Salford, in a street containing 90 houses. The inhabitants of 30 of these houses used water from a well, into which a sewer had leaked, and among them there were 19 cases of diarrhœa, 26 cases of cholera, and 25 deaths; while in the remaining 60 houses, which derived their water supply from purer sources, there were 11 cases of diarrhœa, but neither cholera cases nor deaths.

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\* Report of the Registrar-General on the Cholera of 1849.



There is a difference of opinion concerning the part which impure water plays in the phenomena.

It is believed by some, that the water which induces cholera contains the specific poison of cholera in it, probably derived from the evacuations of cholera patients; while others believe there is no sufficient evidence of this being the case, and they consider that all the facts go to prove that water containing putrescent organic matter acts as a very powerful predisposing cause of the pestilence in a similar way as does putrescent organic matter introduced into the system by the atmosphere or by food, but not as a specific poison.

The matter in dispute is really of no great practical value, for if it be a fact that the use of impure water is dangerous to the public health, the manner of its action is of very secondary importance, at least for practical purposes.

The controversy however having given rise to distinct allegations, setting forth the destruction of human life occasioned by the quality of the water supplied by the companies, especially to the southern part of the metropolis, it became necessary to inquire, 1st, into the quality of the water, and 2d, into the relation, if any, between the use of the water and the mortality from cholera.

*Quality of the Water Supply.*—The facts about to be stated respecting the water supply of the metropolis, refer exclusively to its condition during the prevalence of the late epidemic at a period when (except in the case of the Lambeth Company) the provisions of "The Metropolis Water Act, 1852," had not come into operation. Under that Act, the sources from which the water is taken, the manner of conducting it to the metropolis, and the construction of the reservoirs will be improved, and a portion of the evils complained of will it is hoped be remedied.

Two distinct and separate inquiries have been carried on to determine the quality of the water; one microscopic and the other chemical. The microscopic inquiry was remitted to Dr. Hassall, who has had great experience in similar investigations, and the chemical inquiry was undertaken by Dr. R. D. Thomson, lecturer on chemistry to St. Thomas's Hospital, who has specially studied the influence of waters for domestic use on the public health.

Dr. Hassall was directed by the President to examine specimens of the water supplied by all the metropolitan companies, to be taken at the source of the supplies, from the tanks in which the water is stored, from the companies' mains, and from service pipes, cisterns, water-butts, tubs, &c., through which the supply is received for use in houses and neighbourhoods where cholera was prevalent.

The microscope is a most important means of conducting such inquiries, because it affords a kind of evidence as to the relative purity or otherwise of water which could not be so well estimated by chemical analysis alone. The result of the whole inquiry has been embodied in a series of extremely interesting reports and drawings, of which I proceed to give a brief abstract.

Dr. Hassall states, that the sources from which every metropolitan company, without exception at present, derives its supply are more or



less impure. All the waters taken at those sources exhibit, under the microscope, a greater or less amount of organized matter, living and dead. The presence of living organisms is a sure test of the presence of dead organic matter, and all the specimens examined contained living organisms, animal and vegetable. The purest water at its source is the Lambeth water, taken from the Thames at Thames Ditton. The most impure, on the south side of the river, is the Southwark and Vauxhall water, taken at Chelsea Reach. This last water contains the débris of food derived from the waterclosets and sewers of the metropolis. It also contains living organisms which naturally belong to brackish waters, and proves that a certain amount of tidal sea water is supplied to the inhabitants of the district.

The same living organisms and organic matters are found in the water from the tanks, mains, and service pipes of all the companies. In certain instances, the water is so loaded with organic matter that zoophytes and vegetable productions are developed rapidly, and to a great extent in the mains, and are discharged in masses into cisterns and butts along with the water, and in these receptacles the water is in its worst condition, often containing large worms, vibriones, fresh-water shrimps, fungi, and other cryptogamous plants, in addition to myriads of animalcules belonging to a number of different genera and species.

The real practical deduction from the whole of the microscopical analyses made is, that there is no water at present supplied to the metropolis that does not contain dead and living organic matter, animal and vegetable. But, as has been stated, the Thames Ditton water, supplied by the Lambeth Company, is by much the purest of the waters, while the Southwark and Vauxhall water is one of the worst, and the waters of the other companies might be arranged in a series between these two. The Southwark and Vauxhall water is so similar to the river water, that Dr. Hassall says, "between it and the water of the Thames, as taken from the river at the spot at which the Southwark and Vauxhall Company obtains its supplies, there is frequently only that amount of difference which would arise from mere subsidence."

The effect of storing water in butts and cisterns is to increase its impurity. These receptacles are described as sometimes situated so inconveniently as not to admit of being cleansed. Sometimes they are placed close to privies, so that the water imbibes the emanations proceeding from them. Often the water-butt has no lid, and the water is thus exposed to light and air, both of which promote the generation of organic life. Sometimes the lid is permanently fastened down, and the cistern cannot be cleansed. "Examples without end," he says, "of these conditions might be cited. In the houses and cottages of the middling and poorer classes the water is, for the most part, stored in butts, vats, and pans; these commonly have no lids, and they are unprovided with waste-pipes," and "the water is very apt to flow over at the top and saturate the soil around the house." "In many cases, the size of these butts is so

“small, that they do not afford anything like a proper supply of water, while, in a great many houses, the water is not laid on at all,” and “the daily supply is procured out of the house, and is kept in any jugs, dishes, or pans the people may happen to possess, which are usually placed in the single room which serves as kitchen, sitting-room, and bed-room.”

The use of cisterns and butts tends also to the accumulation of the various organic matters deposited from the water. “We have seen,” says Dr. Hassell, “dozens of cisterns half filled with green confervæ, and other vegetable and animal productions.” Such is the amount of noxious impurities sent into the mains, that a practice prevails in the districts supplied by the Southwark and Vauxhall Company of tying over the service-pipes and tops of the cisterns pieces of muslin, flannel, and very frequently old stockings, to act as filters, and “the quantity of dirt and organic matter obtained in this way in a short time is often perfectly surprising.”

The water itself, as delivered, is described as “nearly always more or less opalescent, containing in large proportions organic matter, living and dead, vegetable and animal.” “The complaints made of this water are almost universal.” “The Lambeth water,” Dr. Hassall says, “is comparatively a pure water, clear and bright, the amount of sediment furnished by it not being considerable. This water is filtered, but the Southwark and Vauxhall water is not filtered before delivery. At all events the amount of deposit was usually so great, and the nature of the organic impurities such, that it is scarcely credible that this water is subjected to any process of filtration previous to distribution.”

Dr. Hassall also examined a number of specimens of shallow well and pump waters, taken from neighbourhoods where cholera had been severe, and states, as a general conclusion, “that nearly all were of a very impure description.”

I have received from Dr. Thomson the following abstract of the results of the chemical analyses of the London waters, which corroborates those arrived at by the microscope:—

“The chemical investigation has extended to the examination of upwards of 70 samples of water supplied by the various metropolitan water companies, principally to houses in which deaths occurred from the epidemic. The result of these analyses has shown that the greatest amount of foreign matter existed in the water supplied by the Chelsea Company, its total amount of impurity being 60 degrees (reckoning each grain per gallon a degree), while its amount of organic impurity was 5.41 degrees. This result was obtained in September, during the prevalence of the cholera, but it was afterwards (in December) found to be characterized by 37 degrees of impurity. The actual amount of impurity may vary from day to day, according to the state of the tide when the companies’ engines are in action.

“Next to the Chelsea water the most impure water was found to be that of the Southwark and Vauxhall Company. Its impurity varied from 34 degrees to 72.66 degrees on one occasion, but the mean of



13 experiments gave 45 degrees as the mean impurity, that of the organic impurity being 4 degrees.

“The most striking evidence of the mixture of this water with decomposing animal matter was obtained by the extraction of a much larger quantity of ammonia from it than has been hitherto suspected. Indeed, the amount of this alkali is so considerable (as much as .773, or upwards of three quarters of a grain of carbonate of ammonia per gallon) that it can be distilled over, fixed by means of an acid, and crystallized with the greatest facility. But this strong test of animal impurity was found in all the waters, and in very appreciable amount in the Thames Ditton water ( $\frac{6.4}{1000}$  per gallon of carbonate of ammonia).

“This fact is an important but unfortunate one, since Thames Ditton has been chosen as the source of supply of all the Thames water companies.

“The following table gives the relative degrees of the total impurity of the metropolitan waters supplied to cholera houses, and taken as soon as possible after the occurrence of death.

|                        |   |   |   |   |                |
|------------------------|---|---|---|---|----------------|
| Lambeth                | - | - | - | - | 13.36 degrees. |
| Grand Junction         | - | - | - | - | 14.46          |
| West Middlesex         | - | - | - | - | 19             |
| Southwark and Vauxhall | - | - | - | - | 45             |
| Chelsea                | - | - | - | - | 60.17          |
| New River              | - | - | - | - | 17.18          |
| Do. do. Soho District  | - | - | - | - | 25.64*         |
| East London            | - | - | - | - | 18.30          |
| Kent                   | - | - | - | - | 17.76          |
| Hampstead              | - | - | - | - | 24.22          |

“The water employed for domestic purposes has been likewise examined from a number of localities in which cholera was prevalent, such as Sandgate, Brasted, Newton Abbott, Nottingham, and numerous shallow wells in the metropolis, which last have been found much more saturated with noxious matter than could have been anticipated, the impurity rising from 100 degrees in the east to 180 degrees in the west of the metropolis.”

The Medical Inspectors, who were more specially occupied with the measures for mitigating the disease in their respective districts, have given the results of their observations as to the condition of the water supply, as they found it in affected houses and neighbourhoods.

Dr. Greenhow says, “the Lambeth water in the tanks was beautiful, the smallest object being clearly discerned at the bottom,” while the Southwark and Vauxhall water “was most turbid, full of animalcules, “and of small substances of confervoid or other vegetable character, “which, gradually coalescing, float near the surface, presenting “whilst in the water much of the appearance of small sponges.”

Deptford, Greenwich, Woolwich, and the part of the parish of Rotherhithe east of the Surrey canal, are supplied from the Kent

\* During the severe outbreak of cholera in St. James Westminster, and St. Anne Soho.



Waterworks, the western district of Rotherhithe being supplied from the Southwark and Vauxhall Waterworks.

Dr. Glover describes the sources of both these waters as pretty much alike, one being taken from the Thames, the other from the Ravensbourne, both of which receive a large quantity of sewage. Both waters contain organic matter and infusoria, the only apparent difference between them being, that the Kent Waterworks Company filter their supply better before it is delivered. This process of filtration, nevertheless, leaves a considerable amount of organic matter in solution.

In Bermondsey, which is also supplied by the Southwark and Vauxhall Company, Mr. Walsh says, "The quality of the water supply continued to be much complained of." Many courts are supplied by one or more open pipes, which flow for a certain time every day (except Sunday), and the daily supply for each house must be caught during the flow, and stored for use. In unpaved or ill-paved courts, the effect of this mode of supply upon the soil is very bad.

"The clause of the Water Act, whereby tenants or landlords may be compelled to lay on water, has never been put in force. There would be obvious injustice, it is felt, in forcing upon them such bad water."

"The baths and wash-houses have been supplied with water of so bad a quality that they have become greatly disused."

In his report to Dr. Fraser on the Waterloo-road district of Lambeth, Mr. Dodd, Union medical officer, remarks, "This district is also partly supplied by the Vauxhall Water Company, and the water is of a poisonous character; very full of dirt and animal matter, and many of the water-butts are kept in such a bad state, and placed so near the privies, as to be unfit for drinking use."

Dr. Hassall says, in regard to the Southwark and Vauxhall water, that it is his deliberate opinion that the use of this water ought not to be permitted an hour longer than is absolutely indispensable.

He further states that in several localities in the parishes under his inspection, there is no water supply at all, the people either buying water from water carts, or taking it from the Thames, the Wandle, or even from ditches.

With reference to the defective and unwholesome system of distribution at present in use, he says, "I beg to express my conviction that the water supply of the metropolis will never be in a condition at all satisfactory, until the use of cisterns is abandoned and the constant method of supply adopted. This conviction has been forced upon me by an inspection of a great number of the cisterns, butts, pans, and tubs, now in use as receptacles for water."

Dr. Greenhow states that the intermittent nature of the water supply is a subject of universal complaint. It is sometimes on for no more than half an hour, unless there be a fire. The quantity is stated to be insufficient. The water butts in a very bad condition, and often extremely foul. There are frequently no butts at all, and the people have to watch for the water coming on, and in these

eases a sufficient supply is never obtained. In a small portion of St. Saviour's parish, there are 1,000 families without any means of storage. Sometimes water tanks are constructed in the ground, close to privies, cesspools and sewers, the contents of which permeate the walls of the tank and pollute the water. The water for Bolton's gardens, Chelsea, a place which suffered greatly from the epidemic, is stored in two hogsheads which supply twenty houses, and the hogsheads, being very leaky, were empty for the greater portion of the day. In Eatling's buildings there is a small tank to supply a number of families, but the stone slab covering it is cemented closely down and cannot be removed to cleanse the tank. In Chelsea there are still a great many places where the people are dependent for water on bad wells or on the river. The inhabitants of Sun-court have to beg water of their landlord, who is a publican. Another publican in the neighbourhood supplies the people with water for dietary purposes.

The parochial authorities have power to compel water supply, but it is inoperative in many cases, as the authorities themselves often own the property, and Dr. Greenhow says, that the law does not apply to a large class of houses which have been sub-divided to accommodate a number of families, on account of the aggregate weekly water rate for the house being necessarily above that specified in the Act.

The water rate is stated to be ill-defined, variable, and not levied in proportion to the rental.

Dr. George Glover calls attention to the defective nature of the water supply in his district. It is complained of as being deficient in quantity and bad in quality. It is received in tubs, pails, &c., which are generally placed close to the privies.

The grievous deficiency of water arising from the manner of distribution was experienced in many of the streets and houses most severely affected by cholera.

Mr. Walsh states that "the localities visited in Westminster, New-court, Ship-court, and others near the workhouse, were nearly all suffering from want of water. The supply is only for an hour or less daily; none on Sunday, and frequently from *open pipes only* running to waste until caught."

It has been stated to me, as a proof of the mischievous results of the present system of supplying the metropolis with water, that the two companies supplying—the one the best, the other the worst—water south of the Thames, often run their mains through the same streets, but by an arrangement between the companies, no one, however convinced he may be of the unwholesome character of the water supplied to him, can obtain the purer water.

*Effect of the Water Supply on the Health of the People.*—In the districts south of the Thames, where nearly every conceivable sanitary defect exists, there are great difficulties in estimating the precise statistical effect of the water used on the health of the population during the recent epidemic. So far as the inquiries instituted by the Registrar-



general go, they certainly exhibit some striking results, which are thus stated.

“In 26,107 houses that derived the water from Ditton, 313 deaths from cholera occurred in 10 weeks. In the 40,046 houses that received the impure water from Battersea, 2,443 persons it was ascertained died from cholera in the same time. The deaths in the latter districts exceeded by nearly 2,000 the deaths that would have occurred if cholera had only been as fatal as it was in the houses that derived their water from Ditton. The Registrars were probably in some cases misinformed, but there is reason to believe that no undue proportion of deaths is referred to houses that the Southwark Company supplies.”

It would thus appear that the mortality in a given number of houses supplied by the Southwark and Vauxhall Company when compared with the mortality in the same number of houses supplied by the Lambeth Company would be about as 5 to 1.

When it is considered that the sanitary condition of the population does not materially differ, except in the quality of the water supplied by the two companies, it is difficult to resist this statistical evidence of the predisposing effect of the Battersea water, and of the loss of life which has arisen from its use.

In Dr. Thomson's report already quoted he says:—

“If water be not an accessory in the production and propagation of cholera, it is a remarkable collateral fact that where cholera has been most fatal in the metropolis the water supply has been most impure. In the Soho district a very remarkable circumstance occurred in the houses supplied by the New River Company. In these it was found that the water, although taken on the same day, possessed a totally different composition from that contained in the reservoir at the New River Head; for while the impurity of the reservoir water was 17.18 degrees, that of the Soho district, obtained from the New River Company, as ascertained by the water receipts, but from what source is unknown, was 30 degrees; the organic impurity being 1.51 degrees in the first case and 2 degrees in the second instance.”

Dr. Greenhow states, that the districts which were under his inspection are supplied with water from five sources, namely, Lambeth, Chelsea, Southwark and Vauxhall Waterworks, the Thames, and springs.

The Board of Guardians of St. Saviour's entertain the opinion, he says, that the nature of the water supply had a material influence on the development of the epidemic in their union.

The facts which apparently justify this inference are the following:

In the year 1849, both the parishes of this union, St. Saviour's and Christchurch, derived their water supply from the same source, namely the Thames, through the Lambeth and Southwark and Vauxhall Companies.

In that year the mortality from cholera was 100 in 10,000 of the population of Christchurch, and 73 in 10,000 of the population of St. Saviour's.



After the epidemic of 1849, Christchurch parish was exclusively supplied with the new and comparatively pure water of the Lambeth company, while St. Saviour's continues to be mainly supplied with the impure water of the Southwark and Vauxhall Company. During the late epidemic the mortality in St. Saviour's had advanced from 73 to 97 in 10,000, while the mortality of Christchurch had fallen from 100 in 10,000 to 44 in 10,000 of the population. This great difference is sufficiently striking; but, while admitting the beneficial results of the purer water, Dr. Greenhow considers it not to be entirely due to the water alone, for Christchurch parish has been improved in other respects of late years, by the covering over of a pestiferous ditch which formerly occasioned a great deal of atmospheric impurity in the neighbourhood, and by other sanitary measures.

In proof that impure water, though a predisposing cause of cholera, does not act as a *specific poison* in producing cholera, Dr. Greenhow adduces several instances in which houses supplied by the Lambeth water suffered from cholera, while those supplied by the Southwark and Vauxhall water escaped. In these cases the greater predisposition to the disease is considered to have arisen from the foul and offensive state of the drainage in the houses supplied by the Lambeth water, and the diminished liability of the houses supplied by the Southwark and Vauxhall water is traced to the counteracting influence of the better condition of the drainage, and to the otherwise better sanitary condition of the houses. He states, nevertheless, as the result of his experience, that the use of the Southwark and Vauxhall water "very greatly aggravated the pestilence."

Several facts were stated to Dr. Mortimer Glover, in the districts under his inspection, to show the connexion between the use of the Southwark and Vauxhall water, and the prevalence of cholera.

Thus, in the part of the parish of Rotherhithe supplied from the Kent Waterworks, 15 cases of cholera had occurred up to a certain date, while 185 cases of cholera had occurred in other parts of the parish; and Dr. Glover says, that the medical men of Rotherhithe were of opinion, "that the impurity of the water had been influential in augmenting the severity of the disease." On the other hand, Dr. Glover states with justice, that the waters are very similar in character, and instances are adduced by him in which violent outbreaks of cholera took place in houses supplied from the Kent Waterworks; so that, from a comparison of the mortality of the districts supplied from the two sources, no satisfactory proof can be obtained, that one is more wholesome than the other. Dr. Glover, however, does not deny in the abstract that the condition of the water may be a predisposing cause of cholera, and cites one remarkable instance in favour of that view in his report.

Mr. Keever, one of the medical visitors in the parish of St. Mary, Newington, in his report on his district, already quoted, says in regard to the waters of the Southwark and Vauxhall and Lambeth Companies, that the complaints among the poor as to the water sup-

plied by the former of these companies were general, both as to its quality and quantity; and he adds, "I feel bound to state my belief that, *ceteris paribus*, diarrhœa and cholera have not prevailed to the same extent where the water was supplied by the Lambeth Company." In regard to the deficient supply of water for cleansing purposes, Mr. Keever says, "a thunderstorm is a great boon to the district."

Where water for domestic use has become actually poisoned by sewage, the effect in predisposing to cholera is much more powerful. An instance of this kind, which occurred at Chelsea, is mentioned by Dr. Greenhow. A drain from Sun-court, crossing Lombard-street, passes through the cellar of the house No. 18, on the opposite side of the way, and so into the river. There is a valve placed at the mouth of the sewer, to prevent the tide from entering it, which valve is under the control of the occupier of the house. On one occasion, during the prevalence of the epidemic, he neglected to give egress to the confined sullage, by opening the valve at the recession of the tide, and the sewer water escaped into a well in the cellar of the next house. Several of the persons in the house used this vitiated water, all of them had diarrhœa, and two had cholera, both of whom died.

In summing up his inquiry as to the effect of impure water on cholera, Dr. Greenhow says, "although doubtless the unwholesome water has much aggravated the result, it is only one cause among several;" and he adds, "the amount of mortality has generally borne a direct ratio to the amount of atmospheric contamination."

On the whole, then, the evidence, from the experience of the epidemics of 1849 and 1854, as to the effect of impure water during an epidemic of cholera, may be summed up as follows:—

1st. That there is no sufficient proof that water in this condition acts specifically in generating cholera, or, in other words, that it is the specific cause of cholera.

2d. That the use of water containing organic matter in a state of decomposition is one predisposing cause of cholera.

3d. That the use of such water has aggravated the severity of the late epidemic, especially in the districts south of the Thames.

#### SECTION IV.

##### *Measures adopted by the Boards of Guardians.*

I next proceed to show from the Inspectors' reports what measures for protecting the public health they found in operation when they entered on their duties at the height of the epidemic, and to what extent the provisions of the Nuisances Removal and Diseases Prevention Act, and the Regulations and Instructional Minute of the General Board of Health, had been complied with.

*Sanitary Precautions.*—In Wandsworth and Clapham Union. Dr. Hassall states that there were six inspectors of nuisances appointed for this Union, but they were most inadequately paid. In



consequence of this, with the exception of Mr. Frost, they did but little, and often resigned their appointments when their services were most required. Very little chloride of lime was used for disinfecting purposes.

Dr. Hassall recommended additional scavenging and disinfecting; that a notice should be issued recommending the inhabitants to clean out all water butts and cisterns, and that the directors of the Southwark and Vauxhall Water Company should be recommended to clean their mains more frequently.

Although these precautionary measures were better carried out in this Union than in Lambeth, Dr. Hassall still considers that much more would have been done had the General Board of Health possessed powers for enforcing its recommendations. He says, "the Guardians, as a body, are not fully alive to the value of cleansing and disinfectant measures; they are not sufficiently impressed with the fact, that it is cheaper to prevent disease than to treat it; and they consider, that if some five or six cases of nuisances are brought before the Board each week, all that is requisite is done."

He points out, that the inspectors of nuisances, as at present appointed, are by no means sufficient for protecting a population from epidemic disease. They are appointed simply for an emergency, and dismissed when it is over; while the necessity of continued inspection and cleansing of epidemic localities is not at all recognized.

Dr. Hassall states that in *Lambeth*, at the beginning of his inspection, two inspectors of nuisances had been appointed, but the address of one of them given on the placards issued by the Board of Guardians, was at a loan office, with which he was connected, but where he did not reside. No one at the house knew his address. Inquiries were frequently being made for him, but, in almost all cases, applicants were obliged to go away without obtaining a hearing of their cases.

Dr. Hassall afterwards learned that the inspector resided out of his district altogether. On this being pointed out to the Board of Guardians, the inspector was required to reside in his district.

The other inspector resided in his district, but there was no name on the door to indicate his residence.

The inspectors were troubling themselves very little with precautionary measures, being satisfied with performing their average amount of work.

Dr. Hassall states, that in no instance, for a considerable period after the outbreak of the cholera, had the inspectors served any notices on landlords requiring lime-washing, neither had they themselves caused any lime-washing to be done in any part of the crowded and populous districts under their charge.

The inspectors had only one man each to assist them during the whole period of the epidemic, and these men were employed principally as scavengers. One of the inspectors had not used a particle of chloride of lime, and the other had used only 2lbs. for disinfecting purposes, for the greater period during which the cholera prevailed, and that among a population of about 140,000.



Dr. Hassall states that it was only after urgent remonstrances, and after threatening to place himself in communication with the coroner in any cases of death occurring in localities where the proper cleansing measures had not been carried out, that he succeeded in obtaining the adoption of these measures even to a limited extent, but before this was done the worst of the cholera was over, and even now not one tenth part of the cleansing required has been carried out.

In reference to the parishes of St. John and St. Margaret, *Westminster*, Mr. Walsh says, "The Nuisances Committee met once a fortnight. That the inspectors of nuisances made frequent visits I can myself affirm, and that lime-washing had frequently been applied under their directions, but many instances came under my notice of drains, cesspools, privies, unpaved courts, &c. being still in a most filthy and dangerous state."

Dr. Greenhow states, that in Chelsea "nothing really had been done by the authorities to prepare for the epidemic," and the condition of the inferior class of property, he says, has gradually been retrograding in a sanitary point of view. As an illustration of the neglect of the Chelsea Guardians, he mentions an instance in which several deaths from cholera occurred from want of the necessary cleansing measures on the part of the Board. In this instance the houses were at last lime-washed throughout, and the cesspools emptied. Twenty-one loads of night-soil were removed, and the whole cleansing expenses for twelve houses amounted to 16*l*.

The neglect in this case arose from the Board not having exercised the powers of the Act so as to have put the houses in good sanitary condition, instead of delaying till several lives had been sacrificed.

Dr. Greenhow states that, in neither Chelsea, St. Saviour's, Southwark, St. George's, Southwark, nor in Newington, were the recommendations of the General Board of Health adopted and carried out with sufficient zeal. "When I commenced duty on the 9th September," (after the epidemic had attained its maximum,) "I found no cleansing staff belonging to the Boards of Guardians in any of the unions or parishes under my inspection."

In St. George's parish, there was an active inspector of nuisances and several sub-committees of the Board of Guardians for inspecting courts and houses, but neither in St. Saviour's nor St. George's was any attention paid to the sanitary condition of the interior of the dwellings.

The inspector of nuisances of St. Mary, Newington, was inadequate to overlook so large a district.

In Chelsea, the relieving officers acted as inspectors of nuisances, but most inefficiently, on account of their time being almost wholly absorbed by their ordinary duties.

At *Rotherhithe*, Dr. Mortimer Glover found two inspectors of nuisances, and great efforts made to get rid of nuisances, but without success; the authorities alleging their want of jurisdiction over the sewerage as a reason, and the Guardians declined to proceed with the removal of nuisances, as entailing a useless expense.

There was no inspector of nuisances at *Deptford*, when cholera was at the worst.

In *Greenwich* there was at the same time no inspector of nuisances, and no attempts being made to abate nuisances.

Taking all the parishes together, in which the epidemic was most fatal, it appears that in not one of them was the preventive machinery, sanitary and medical, organized in accordance with the Minute of Instruction, although some parishes had done more than others.

*Houses of Refuge.*—The opening of places of refuge, in which to receive families from overcrowded and infected houses and neighbourhoods until their houses were cleansed and lime-washed, was attended by the most salutary results during the epidemic of 1849.

The General Board of Health at that time issued special orders to the parochial authorities for providing such houses, and the results of the experience obtained, were sufficiently remarkable to prove that the removal of the people from places where cholera has become localized, is one of the most effective means of preserving human life.

It has been shown, that when cholera attacks the inmates of any house or group of houses, between 30 and 40 per cent. of the attacks take place in houses where more than one person has already suffered, and that in some instances 87 per cent. of the cholera attacks, and 61 per cent. of the deaths have taken place in houses where other attacks had already occurred. On removing these same people to places of refuge out of the affected district, it is found that a large proportion of them are seized with diarrhœa, which is easily discovered and cured by the medical officer in charge of the refuge, and that very few of the cases go into developed cholera.

The experience of six houses of refuge during the cholera in 1849, given in the report of the General Board of Health, showed that out of 1,691 persons removed from infected houses and localities, there were only thirty-three cases of cholera and ten deaths, a mortality of less than 0.6 per cent. of the population, or less than one twentieth part of the mortality in many affected courts and alleys.

In their Regulations and Instructional Minute, issued before the appearance of the late epidemic, the General Board of Health called the attention of the Boards of Guardians specially to this means of saving life; but I do not know of a single instance of any metropolitan parish having had a place of refuge, except the workhouse, in readiness before the epidemic broke out. In only one or two instances was a place of refuge provided after the disease appeared, and in only one parish, so far as I have been able to ascertain, was the accommodation so provided made use of.

The general practice in regard to this important preventive measure is thus stated by Dr. Greenhow:—

Another duty entirely neglected by all the Boards, without exception, was the provision of suitable houses of refuge, to which the healthy might be removed from infected houses, and much loss of life was no doubt entailed by this neglect. In a few cases people were removed to workhouses, but the working classes very naturally



refused to avail themselves of such a provision for their safety. Dr. Greenhow says, "one woman told me that rather than become a pauper, she would drown both herself and her children."

Dr. Mortimer Glover says that he strongly recommended the opening of houses of refuge at Rotherhithe, Deptford, and Woolwich, but without effect. At Deptford, Captain Martin offered the use of a ship for a hospital, but the offer was either not accepted at all, or the acceptance was delayed till it was too late.

In the parishes of *St. John* and *St. Margaret, Westminster*, Mr. Walsh says, "the notoriously filthy and overcrowded state of many whole streets and courts, pointed out the providing houses of refuge as a measure of the most obvious and urgent necessity."

"The Improvement Commissioners had and still have several of their condemned houses unoccupied. An inquiry made by me at the office produced a most complete and unqualified offer to place any of these houses which might be deemed suitable at the disposal of the Board, but no use whatever was made of these unusual facilities."

The only instance which has come to my knowledge of the removal of people from infected houses and localities, took place at Fulham, where the Guardians erected a large tent outside the workhouse for receiving children. In this tent they lived and slept.

Dr. Hassall gives the following as the result of the proceeding.

"I find," he says, "that 76 children in all had been received into the tent; of these nine became subsequently attacked with diarrhoea, and two of these cases passed into cholera, but both ended in recovery. The first case of diarrhoea occurred three days subsequent to the removal from an infected house."

This experience confirms that of the epidemic of 1849, and along with it proves how large a sacrifice of life has been entailed on the community by neglect of this important precautionary measure.

*Medical Relief Measures.*—Before proceeding to describe the measures adopted for the medical relief of cholera, I shall abstract a brief description of the state of the health of the population from the Inspectors' reports, in order to show the nature and extent of the relief that was necessary to meet the emergency.

In describing the circumstances attending the appearance of the epidemic, and the universal prevalence of diarrhoea, Dr. Greenhow says that the choleraic aspect was generally well marked, and could be detected in persons residing in districts where cholera was prevalent, although perhaps these persons were free from disease, or were at most suffering from very slight diarrhoea; that cholera manifested the usual tendency to partial local outbreaks, attacking a single court or even a single house, cutting off several persons and then disappearing; that in all the districts there were nevertheless certain favourite localities from which it was hardly ever absent while the epidemic lasted. "Thus the first cases of cholera in Chelsea, in 1832, were in Augnsta-court, Lawrence-street, wherein there have recently been several fatal cases." The earliest as well as the latest cases of the epidemic in Chelsea in 1848, were in White Hart-court, Lombard-street. The name of the court was changed in consequence,



but true to its laws, cholera appeared in the court early in the present epidemic, a death took place in the same house in which there was a fatal case in 1848. Other cases, and at least one other death occurred, and diarrhœa prevailed so extensively that one-half of the inhabitants were under treatment for it. Other similar instances are also mentioned.

It was observed in the parishes of *St. Giles and St. George, Bloomsbury*, that in nearly five cases out of six, the late epidemic occupied the same localities as its predecessor of 1849. Even particular houses showed a local affinity for the disease. Thus in eighteen such houses, there are recorded nearly one-third of the whole number of cases, and of these same eighteen houses every one was also visited by the cholera in 1849.\*

The tendency to partial outbreaks was observed with regard to diarrhœa as well as cholera, and although Dr. Greenhow was occasionally informed of cases in which the more malignant symptoms came on at once without the previous existence of diarrhœa, he himself met with no such case, but he "invariably found on careful inquiry, that diarrhœa of longer or shorter duration had preceded the more urgent symptoms." Most frequently diarrhœa had existed for several days or at least for a sufficient number of hours to have given ample warning. In a few instances, the interval betwixt the first appearance of the disease and its full development, did not exceed four or five hours.

The general curability of the diarrhœal stage, even in localities where the epidemic was most severe and amongst classes of persons peculiarly predisposed to cholera, is evidenced by a fact stated by Dr. Greenhow, that "out of 330 cases of diarrhœa among the inmates of St. Saviour's workhouse, only one passed into cholera and that recovered." It would be easy, he says, "to multiply evidence on this head," and that although the severe and rapid cases of cholera "are probably death-stricken from the outset," such cases are exceptional, and by no means confute the ordinary opinion of medical men, that treatment in the earlier stage of the disease "is for the most part successful."

Diarrhœa is stated by Dr. Greenhow to have been "extremely common during the existence of cholera in all the localities." In most of the houses in which cholera occurred, diarrhœa was still more prevalent: in many no individual altogether escaped. In fact comparatively few persons in an epidemic district passed through the entire course of the visitation without some symptoms of indisposition. Referring to this general effect of the epidemic Dr. Greenhow says, "Between the cold pulseless moribund patient in the last stage of extreme collapse and the person whose indisposition was so slight as not to interfere with his ordinary pursuits there was, it is true, a vast gulf, but this was spanned by a series of cases differing from each other by imperceptible degrees of severity."

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\* Report of the Sanitary Committee of St. Giles and St. George, Bloomsbury.

Dr. Milroy, who made a careful inspection of the *Parish of Camberwell*, reported to the President of the General Board of Health that diarrhœa prevailed extensively in all the districts; that in the great majority of the cholera cases there had been premonitory symptoms; that the cholera cases were generally seen for the first time in collapse or verging towards it; and he states that in one district of the parish out of fifty-nine cases of cholera ten were first seen in collapse and all died, while the remaining forty-nine cases were first seen at an earlier stage and all recovered except nine.

Dr. Macloughlin states that in *Stepney Union* diarrhœa prevailed to such an extent that it was found impracticable to record all the cases, but between 5th August and 14th October 1854 there had been dispensed gratuitously as much astringent medicine as would have served for at least 15,000 persons. The persons actually known to have received medical attention for diarrhœa between these two dates were 8,610.

The medical officers and visitors stated that all the cases of cholera they had seen were preceded by diarrhœa. If the proportion of cases to the mortality held good over the whole union, the total registered deaths from cholera would represent 45,000 epidemic diarrhœa cases.

In *Poplar Union* Dr. Macloughlin states that during the five weeks preceeding his inspection diarrhœa had been increasing rapidly, so much so that the medical men and their assistants were unable to spare time to take down the names and addresses of applicants for relief.

He states that the medical officers in this union had not had a single case of cholera without previous diarrhœa for a longer or shorter time. A similar statement was made by all the house-to-house visitors. In this union 9,899 persons are known to have been treated for diarrhœa.

In *Holborn Union* the medical officers reported diarrhœa to be very prevalent, and both medical officers and house-to-house visitors stated that they had not had a single case of cholera which had not been preceded by premonitory diarrhœa. From the first week in August to the 14th October there were attended by the medical officers and visitors 2,600 cases of diarrhœa.

In *St. Giles's* diarrhœa and cholera were very prevalent in the usual epidemic localities.

Every case of cholera had been ushered in by diarrhœa of a longer or shorter duration.

The medical officers and visitors attended from the beginning of August to the 14th October 4,061 cases of diarrhœa, of whom 22 died, and 120 cases of cholera, of whom 73 died. From a very extensive experience, during the present and former epidemics, Dr. Macloughlin states it as his conviction that diarrhœa is invariably the first symptom of cholera.

Dr. Mortimer Glover states that in the parts of *Deptford* and *Greenwich* which suffered so severely diarrhœa "prevailed throughout."



Severe diarrhœa rapidly passing into cholera prevailed all over the affected parts of the parishes of *St. James Westminster*, and *St. Ann Soho*, which were under the inspection of Mr. Patterson. In short, wherever the cholera existed diarrhœa accompanied it; so far as is known, almost every cholera case had been preceded by diarrhœa, and there is reason to fear that many lives were lost through inefficient measures for checking the milder stage of the disease.

Mr. Walsh cites as a striking illustration of the severity of the epidemic in the parish of Bermondsey, where no fewer than 838 persons died of cholera, that "diarrhœa seemed both by the people and " the medical officers to be taken but little account of, the former " not applying for its relief, and the latter not always recording the " relief given." This one fact shows the absolute necessity which existed for an extensive and thoroughly efficient system of house-to-house visitation, and it points very clearly to one source of the great fatality of the epidemic in that parish.

This fatal neglect of the premonitory diarrhœa Mr. Walsh ascribes partly to the medical relief of cholera having been made a parish matter, for, he says, the numerous respectable working population of Bermondsey, who were the chief sufferers, naturally held anything connected with the parish "in the greatest abhorrence."

*House-to-house Visitation.*—The medical relief of cholera, so far as such relief can be rendered available for diminishing the mortality from the disease, requires to be so organized and directed as to cope with and cure it in its earlier stages, instead of being mainly reserved for the fully developed form of the pestilence.

In the report and appendices of the General Board of Health, on the epidemic cholera of 1849, it was shown not to be enough for the accomplishment of these objects, to open dispensaries for the distribution of medicines to all applicants. It was proved also to be a necessity, founded on the nature of the disease, that medical relief should be sent into affected districts, instead of trusting to relief being applied for by the patients themselves. It was pointed out in the same report, that in all localities where cholera had broken out, or where an attack is imminent, diarrhœa is extensively prevalent. That the poor themselves overlook the dangerous significance of this symptom. That they are often apathetic, and unwilling to take any steps to arrest the diarrhœa. That medical aid is often not applied for till it is too late to be of use. That deaths from cholera sometimes take place without any medical attendance. That fatal cases of cholera are in reality those cases which are hardly ever seen by the medical attendant until the disease is fully developed, or until collapse has come on, and that when the epidemic is brought under treatment in its earlier stages, a very small proportion of the cases prove fatal.

These peculiarities of the epidemic had indeed been recognized as far back as the year 1832, and domiciliary visitation was tried in one or two instances.

In the first notification of the General Board of Health, issued at the very beginning of the epidemic of 1848, the local authorities were recommended to organize lay visiting committees, to ensure the



treatment of the premonitory diarrhœa. In my report to the Board on the epidemic of 1848 and 1849, I stated, that on the 7th December, 1848, during the severe epidemic cholera in Dumfries, when lay visitation was not applicable to the emergency, I recommended the Board, for the first time, to substitute medical house-to-house visitation for lay visitation, to arrest the disease in its earlier stage, by sending medical aid to the houses of the people, "by enjoining all "medical officers" (14 in number for a population of 10,500) "to visit not only cholera cases, but to make a house-to-house "visitation throughout their respective districts, to carry with them "medicines for immediate use, and to administer them on the spot "to all persons affected by diarrhœa. The visitation to be made "once a day at the least."

This recommendation was made matter of special order by the Board on the 9th December 1848, and was carried out with results so beneficial, that medical house-to-house visitation was adopted in other affected towns during the whole course of the epidemic.

House to-house visitation was carried out to some extent in the metropolis, under the inspection of Mr. Grainger, during the epidemic of 1849, and that more good was not done by it at that time is to be attributed to the same causes which have led to its still more limited application during the late epidemic, namely, the remissness of the local authorities. Nevertheless, in 1849, there were discovered by the visitors, and brought under treatment in the metropolitan parishes, within a period of eight weeks, 43,737 cases of diarrhœa, and 978 cases approaching to cholera. Out of this whole number, of 44,715 epidemic cases, only 52 passed into developed cholera. During the same eight weeks, the visitors discovered 780 cases of developed cholera not under treatment.

All the facts stated above were perfectly well known. Moreover, during the severe outbreak of cholera in Newcastle, in 1853, organized house-to-house visitation was the means of saving many lives, and the General Board of Health, in anticipation of the epidemic attacking other districts, drew up and sent to all the parishes in the kingdom their printed Instructional Minute already mentioned, giving directions to the Boards of Guardians how to organize and carry out the measure. Every means of conveying practical information to these Boards had been adopted. But I am sorry to find from the reports of the Inspectors, that when they began their inspection they found that, with one or two exceptions of more healthy parishes, none of the metropolitan parishes had organized or prepared for putting in operation the provisions of the Instructional Minute. In a few of the parishes, after great exertions on the part of the Inspectors, and repeated recommendations on the part of the President of the General Board of Health, a few visitors were appointed, but, in most instances, nothing effectual had been done, and some of the parish authorities eventually did nothing.

In the appendix, Table III., are given the results of the medical relief measures, for a number of parishes, so far as these can be gathered from the parochial returns, and the following table gives the

total numbers of epidemic cases so treated between the middle of August and the end of October.

|                    | Diarrhœa<br>Cases. | Cholera<br>Cases. |
|--------------------|--------------------|-------------------|
| Dispensary cases - | 14,453             | 45                |
| Medical Officers - | 47,524             | 3,531             |
| Visitors - -       | 7,606              | 481               |
| Total - - -        | 69,583             | 4,057             |

Dr. Hassall gives the following account of the medical relief measures in operation in *Lambeth* on the 4th September, when he first inspected the parish during the height of the epidemic.

There were no day or night dispensaries.

There were no houses of refuge.

There were no house-to-house visitors.

The accommodation for cholera cases consisted of two wards in the workhouse.

The medical relief for the whole parish, with its 140,000 inhabitants, consisted of nine medical officers and two assistants.

Dr. Hassall recommended that eight day and night dispensaries should be opened; and that nine house-to-house visitors, to act under the superintendence of the district surgeons, should be appointed.

These suggestions were approved and recommended for adoption by the President of the General Board of Health, but the Lambeth Guardians declined to accede to them.

The parish was therefore left without any adequate protection against the epidemic.

The course which the parish authorities actually took was to issue a circular, offering to the medical practitioners in the parish a small payment for every case that might apply to them. But out of 120 resident medical men, 32 only consented to act on the terms proposed.\*

\* The following are copies of the Circular sent to the medical men in the parish, and also of the form they were expected to sign and return to the Clerk.

SIR,

Lambeth Workhouse,

August 12, 1854.

I AM directed by the Sanitary Committee of Guardians for the parish of Lambeth, to acquaint you that during the prevailing epidemic, they are prepared to enter into an engagement with yourself, and other resident medical practitioners, for the first attendance and treatment of all persons (not being private patients) attacked with diarrhœa, at 1s. 6d. per case, and with cholera 2s. 6d. per case; and that after such attendance and treatment they be referred by you to the medical officer of the district for his attention.

If you are willing to accede to this arrangement, I am to request that you will sign the accompanying form, and transmit the same to me forthwith, and upon receipt thereof, I will forward printed forms for reference to the district medical officer.

I am, &c.

W. T. LOGAN, Clerk.

TO THE BOARD OF GUARDIANS OF LAMBETH.

GENTLEMEN,

I HEREBY undertake the preliminary attendance and treatment of all cases (not being private patients) of diarrhœa and cholera which may be brought to my notice, for the sum of 1s. 6d. per case of diarrhœa, and 2s. 6d. per case of cholera.

August 1854.

I am, &c.



On the 7th September, Dr. Hassall found the medical relief in *Wandsworth* and *Clapham Union*, to be as follows.

There were seven district medical officers, and six assistants.

There were no day and night dispensaries, but one dispensary which was opened for a few hours daily.

There were three house-to-house visitors employed in Battersea district, the assistants of the medical officers doing duty in the other districts where necessary.

There was a resident medical officer at the workhouse, and four wards set apart for cholera cases, which were in admirable order.

There were no houses of refuge, the workhouse being used as such, when there was room. The Guardians had, moreover, formed themselves into district committees for inspecting nuisances, &c., so that upon the whole considerable provision had been made for meeting the epidemic in this union.

Considering the extent of the union, Dr. Hassall, with the sanction of the President, suggested the opening of six day and night dispensaries, in parts distant from the residences of the medical officers, and also the opening of a house of convalescence, should the epidemic continue to spread, as relapses from cholera were very common.

Several suggestions as to cleansing measures were also made.

The cleansing measures were adopted, but the other suggestions were not adopted.

Neither in Wandsworth Union, nor in the parish of Lambeth, were the medical relief measures organized on the plan of the Instructional Minute issued by the General Board of Health.

Dr. Hassall points out the entire want of uniformity in the relief measures adopted by the different Boards, and in the amount of medical relief given, and shows the necessity of the General Board of Health possessing sufficient compulsory power, for he says, "in the majority of cases the recommendations of the Board are not adopted at all, or else only partially so. If a fixed system of medical relief were organized alike in all cases, the Superintending Inspectors would undoubtedly be able to affect a much larger amount of good than they do now. At present their time and energies are partly spent in contests with the local authorities in order to get them to adopt even a portion of the recommendations of the General Board of Health."

Dr. Macloughlin reports as follows:—In *Stepney* he found that no house of refuge had been provided. That there was only one dispensary for the whole Union, and that although medicines had been placed at four police stations, there was no medical attendant to direct their distribution.

The Guardians had authorized the medical officers to appoint house-to-house visitors, but only one had been appointed.

On the recommendation of the President of the General Board of Health, additional house-to-house visitors were employed, and a medical officer appointed for each depôt of medicines.

In *Poplar Union* there were four medical officers for out-door service, and eight day and night dispensaries. The Guardians had



authorized the appointment of house-to-house visitors, but none had been appointed. The medical relief measures in this case were extended by the employment of six house-to-house visitors.

In *Holborn Union* there were three medical officers for out-door service, and ten assistants, who also performed the duties of house-to-house visitors.

The arrangements in *Holborn* were considered to be sufficient for the then intensity of the epidemic.

In *St. Giles' and St. George's, Bloomsbury*, there were one medical officer, three assistants, and two house-to-house visitors.

In this union two additional visitors were appointed.

Dr. Walsh says, that in the *Westminster parishes*, "the Instructional Minute of the General Board of Health had not even been seen by any one of the medical officers, nor had any organization been made according to its provisions."

In these parishes the returns required for ascertaining the progress of the epidemic were never made, and Mr. Walsh says, "house-to-house visitation had not so much as been attempted."

In *St. Olave's Union*, Mr. Walsh states that the arrangements for attending the parish paupers were most complete; but the very completeness of the parish arrangements rendered them inapplicable for protecting the public health in the union. "The mere fact," he says, "that all applications for medical relief had to be made at the workhouse, would necessarily limit their number to the very poorest class."

"No attempt was made at medical house-to-house visitation."

Mr. Walsh's inspection of *Bermondsey* began on the week during which the deaths from cholera attained the maximum, namely 126, and he found that the Board of Guardians had up to that time neglected to put the directions in the Instructional Minute into operation. They had neither house-to-house visitors, nor houses of refuge, and of course they had not adopted the organization in the Minute.

At a later date they got two medical men in practice, one from a distant part of London, to visit for a few hours daily.

No additional dispensaries were provided, nor were the three additional medical officers Mr. Walsh had recommended procured.

"The force of the epidemic," says Mr. Walsh, "therefore, may be said to have spent itself without any special organization whatever, calculated effectually to meet or control it, having been adopted." "It is admitted, he says, "that during the time of severest pressure on the medical officers, some few of the cases were not attended to, even of those applying for assistance, and it is impossible not to conclude that many passed the first and manageable stage, without seeking that aid which a systematic house-to-house visitation would have brought to their doors."

In *Clerkenwell*, Mr. George Glover states, that the Guardians "utterly disregarded" the recommendations of the President of the General Board of Health; that "from the first there was an openly expressed determination not in any way to be interfered with by the Board. The inspector was treated with discourtesy, and the

“ district medical officers and their recommendations were regarded with contempt.”

During the cholera of 1849 the parish of *Bethnal-green* lost 789 of its inhabitants, and when it was inspected by Mr. Glover in the middle of the late epidemic, it had no house-to-house visitors; no house of refuge for the working classes except the Union Workhouse; the only dispensary relief for a population of above 90,000 was afforded by an arrangement with one public dispensary. This was in reality all the preparation for the epidemic that had been considered necessary, and there was no organization for saving life in the event of the disease extending its ravages. “The authorities,” says Mr. Glover, “practically did nothing, although promising almost everything.”

As a contrast to the neglect of duty on the part of the authorities of *Bethnal-green*, Mr. Glover states, that the precautions adopted in the parish of *Islington* were highly satisfactory from the beginning, and that the necessary measures were taken by the parish of *St. George-in-the-East* with great readiness, although none had been adopted before the middle of the epidemic.

The parish of *Shoreditch*, which suffered so severely during the epidemic of 1849, escaped this year with less than one-third of the mortality. In 1849 the deaths amounted to 789, and the great bulk of the mortality took place within comparatively small limits. It seemed likely that the local authorities in this case would have profited by the calamity which formerly befel this parish, and that active measures would have been adopted.

Dr. Richard King inspected the parish when the epidemic had arrived at its maximum, and reports as follows:—

“There is no house-to-house visitation; neither a day nor night dispensary, nor any depôt of medicines whatever; not a single notice has been printed to inform the poor of the addresses of the only four officers who are thus silently entrusted with the important charge of administering to the population labouring under diarrhœa, as well as isolated cases of cholera. Not one of the medical officers has even been asked to make a return.”

Dr. Glover states that on his first inspection the parochial authorities of *Rotherhithe* were found to have empowered the medical men to call in additional assistance, but they had not done so. There were no house-to-house visitors,—there were no dispensaries,—in fact, no provision had been made for the impending epidemic, and there was no accommodation for cholera cases. Various suggestions were made to the *Rotherhithe* authorities, backed by the special recommendation of the President of the General Board of Health, and Dr. Glover reports the result to have been that the *Guardians* positively refused to do anything.

At *Deptford* there was one dispensary, and three druggists had been appointed to supply medicines night and day. There was no inspector of nuisances, no house of refuge, no house-to-house visitors, and the medical attendance was deficient.

At *Greenwich* there was no house-to-house visitation, the *Guardians* alleging that the cholera was declining. There was no inspection of



nuisances, and there appeared to be no attempts made to abate them. There was no house of refuge, and the medical attendance was insufficient. There was no accommodation for cholera cases. Suggestions were made for remedying all of these defects; but, notwithstanding the urgency of the matter, Dr. Glover reports, that "not one of the propositions was carried out at the time, although after some delay, at the expiration of weeks, they were partially or in whole carried out."

Dr. Glover says that the mode in which necessary measures for the protection of the public health are evaded, "is a striking example of the penny wise and pound foolish system. The orphan children of those dead of the cholera received into the union workhouse at Greenwich alone, I am informed, will cause the union an expenditure of £700 a year."

At *Woolwich* the Local Board of Health appointed house-to-house visitors from the first.

Mr. Patterson states in regard to *St. James, Westminster*, that at his first meeting with the parochial authorities, in the very midst of the frightful outbreak of cholera in that parish, he "was astonished to find that little or no preparation had been made." They usually have one medical officer to attend their poor, and two others had been recently appointed, but there was no organization such as that laid down in the Instructional Minute. This parish, however, under the pressure of the epidemic, adopted the necessary measures, but too late.

Dr. Greenhow thus describes the preparations he found had been made when he began his inspection of his districts. "There was," he says, "no systematic inspection of the houses occupied by the poorer classes in epidemic localities. No houses of refuge for the temporary accommodation of the healthy inhabitants of infected places. With the single exception of Newington, wherein house-to-house visitors and dispensaries had been agreed to and appointed the day before, but were not in full and active operation till the 12th September; no system of domiciliary visitation for the purpose of detecting and curing the disease in its earliest stage; and lastly, no efficient system of supervision by a medical superintendent or otherwise to direct and vary, as circumstances might render necessary, such imperfect and inefficient measures as were in force."

Although the Boards of Guardians had not adopted the recommendations of the General Board of Health in their integrity, some little addition had been made to their usual medical relief. An additional medical officer was appointed at Newington in one of the worst localities, and a most efficient system of inspection of the inmates was put in operation in the workhouse, by which from 160 to 180 cases of diarrhœa were discovered and treated, the result being, that, notwithstanding the unhealthiness of the locality, and the extreme severity of the epidemic in the district, only two deaths from cholera took place in the workhouse, one being that of a bedridden person, and the other case had contrived to evade the regulations.

In *St. Saviour's Union* the medical officers were authorized to call in casual medical assistance, but did not avail themselves of it, although they had on some days upwards of 100 fresh cases of diarrhœa to attend, in addition to cases of cholera. *St. Saviour's Board*, however, appointed a medical sanitary inspector and an assistant, by whose exertions much good was effected.

Dr. Greenhow further states, that in *St. George's parish* no additional medical assistance had been directly provided, the same objectionable system having been pursued as in *St. Saviour's*, namely, that of authorizing the existing medical officers to provide assistance, the Board of Guardians thus throwing the responsibility off their own shoulders to those of the medical officers, and that without any arrangement as to the amount of remuneration for the extra anxiety and expense to be incurred.

In *Chelsea* he found that "two assistant medical officers had been appointed to relieve the regular medical officers, and to act as house-to-house visitors, a combination of incompatible duties which resulted in the almost entire neglect of the latter."

The imperfect and inefficient measures found in operation, and the delay in adopting more active proceedings, appear to have arisen from a mistaken sense of duty to the ratepayers, and from members of different Boards of Guardians being themselves occasionally large owners of cottage and other property.

"Such members often attend most diligently all meetings, and thus acquire an influence which overpowers that of the better disposed; who probably in all cases constitute the majority."

Dr. Greenhow states, that although the measures he found in operation were extremely defective, the recommendations of the President of the General Board of Health, made through his medium, were courteously received, and for the most part ultimately adopted, but that arrangements made during the height of the epidemic, were necessarily extremely defective. "I fear," he says, "many lives that might otherwise have been saved, have on this occasion been sacrificed by the absence of more systematic arrangements."

The number of house-to-house visitors was in every instance insufficient.

Dr. Greenhow says, that "there can be no doubt that in many cases, orphans and widows, unnecessarily rendered such by the dilatoriness of Boards of Guardians, will constitute a heavy burden upon the ratepayers for several years to come."

The result of the whole inquiry, as regards the administration of the sanitary and medical relief measures by the Boards of Guardians, is that, generally speaking, they were inefficient in character and extent, except in some of the larger and more healthy parishes, where they were least wanted. The experience in this respect is essentially the same as that obtained during the cholera of 1849, and it demonstrates that some more suitable local authorities, with adequate powers for carrying out permanent sanitary works and measures, and for providing the working classes with adequate medical relief



during seasons of pestilence are absolutely necessary for the metropolis.

#### SECTION V.

##### *Causes of the defective Administration of Sanitary and Medical Relief Measures.*

In considering this part of the subject, it is of importance to remark that the duties devolving on Boards of Guardians under the Nuisances Removal and Diseases Prevention Act, and the regulations of the General Board of Health, are not solely and specially the protection of the parish poor from cholera. These Boards appear to have been invested with the office of guardians of the public health mainly to avoid the necessity of erecting new local authorities, and because, to a certain extent, machinery which might be used for protecting the public health was already in their hands.

Let us next inquire on what classes of the community the force of the epidemic chiefly fell, in order that we may be able to form an estimate of the extent of protection against its ravages that was likely to be afforded by the administrative authority.

The statistics of the late epidemic are not so far complete as to afford accurate information on some points, but, from an examination I have made of the returns, I am of opinion that the weight of the epidemic of 1854, like that of the cholera of 1849, will be found to have fallen neither on the paupers nor on the richer classes of the community.

The deaths from cholera in the metropolis during the epidemic of 1849 were 14,590. Of these 329, or little more than 2·2 per cent. were gentry, 1,989 or 13·6 per cent. were tradesmen, and 10,332 or 60·8 per cent. of the total mortality fell to the lot of mechanics and their families; 1,940 or about 13·2 per cent. were undescribed.

It thus appears that, practically, the present state of the law vests the protection of the working classes and small tradesmen during periods of pestilence in the hands of the Poor law Guardians, while the chief localizing causes of pestilence have been already shown to be those requiring a totally different authority to deal with them.

Boards of Guardians, however willing, cannot sewer a street or drain a house. They cannot pave a court or control the water supply; all they really can do, is to enforce partial cleansings, and removal of nuisances, very useful no doubt if fully carried out, but requiring the Guardians to interfere with each other's interests or properties, or to place themselves in antagonism with other local authorities.

Again, when cholera is actually present, it comparatively spares their paupers, and carries off the working classes and small tradesmen, who detest parish assistance in all forms; and yet the only medical care exercised over these classes is that of the parish doctor. The dispensary is a parish dispensary. The house of refuge, one of the most important of all the preventive measures, is the parish workhouse, within which is also the parish hospital.

In *St. Giles* and *St. George, Bloomsbury*, the deaths from cholera in 1849 were 285, and the deaths from the epidemic of 1854 were 116, while the parish authorities state in their report that, "Amongst the known paupers no fatal case has occurred, either in the poor-house or on any of the parochial relief boards. In 1849 there were very few fatal cases amongst the poor receiving relief; in 1854 not one." I have reason to believe that the sanitary condition of the parish poor is considerably better than that of the working classes generally.

The incompetency of the existing local administration to deal with the epidemic immediately arrested the attention of the Inspectors who have had the worst districts of the metropolis.

Mr. Walsh points out as the result of his experience how unfit the guardians of the *poor* are to be the guardians of the *people* in a matter so important as the public health. "They are," he says, "the guardians of the *poor* against starvation and sickness, and the guardians of the *rates* against all except the poor. Their functions are instinctively *exclusive* not *inclusive*."

Dr. Mortimer Glover says, in reference to the prevention of cholera, "I think my report offers sufficient evidence of the incompetency of Boards of Guardians in general to work a measure of public health." In such a case as New-street, Deptford, where a very frightful outbreak of cholera occurred, he doubts whether any sanitary improvements short of the entire destruction of the property and the erection of model lodging-houses on its site, would remove the existing causes of epidemic disease. He says, "until the root of the matter is gone into, and until the powers of the General Board of Health are extended, or some similar central Board has the power to compel local authorities to adopt remedial measures, or until there be some Local Board acting under the supervision of a central authority, nothing effectual to remedy the existing evils will be done."

Dr. Greenhow, while remarking on the neglect of precautionary measures by the Boards of Guardians, points out that these bodies are elected for the express purpose of performing totally different duties from those devolving upon them under the Nuisances Removal and Diseases Prevention Act, that "parsimony is regarded as the one grand virtue; hence when they are elected they conceive themselves called upon to resist every unusual expenditure, and to cut down the ordinary outlay to the lowest possible amount."

That this dilatoriness and false economy are exercised at a period when promptness, method, and extra expense are especially called for, and that however convenient it may be to employ the Guardians as authorities elected by the ratepayers, the doing so is entirely at variance with the efficient administration of sanitary laws especially during a severe epidemic visitation.

Dr. Greenhow further points out that notwithstanding the great sanitary evils at present existing in the parishes under his inspection, there is in reality no authority competent to deal with them. The whole sanitary administration is in a state of chaos. There is a



multiplicity of authorities with ill-defined duties—water companies, paving boards, cleansing boards, commissioners of sewers, district surveyors, boards of guardians, &c.—and it is no unfrequent occurrence to find the administrative authority of some of these Boards in the hands of parties directly interested in the continuance of the present state of matters. The practical result is that the great majority of the population of these large districts of the metropolis are left without any adequate protection against the ravages of epidemic or other preventible diseases. The evil unquestionably exists, but the remedy has yet to be provided, for no systematic supervision over the sanitary state of the metropolis is in existence.

The mischief arising from the owners of a bad class of property getting elected on Boards of Guardians and using their influence at the Board to compound for the rates on their own property is also forcibly pointed out.

Dr. Greenhow also shows that in no part of the metropolis except the City of London, which like Liverpool and a few other towns has an officer of health, is there any officer conversant with the effect of local influences on the health of the population, and hence all the sanitary measures adopted are imperfect. Dr. Hassall also states his opinion that a well organized staff of officers of health is indispensable for the metropolis.

In these opinions, as to the necessity of officers of health, which are also shared by the other inspectors, I entirely agree. The diseases of towns depend, like those of the human body, on a variety of concurring causes, evidencing the extent and nature of their operation by distinct symptoms in the inhabitants, recognizable by those who are specially conversant with the subject. So-called sanitary improvements carried out in the absence of the necessary knowledge of the effects of those local conditions which they are intended to remedy, may be in any case, as they have been in many cases, mere empiricism and waste of money. And this can only be avoided by making use of the assistance of qualified officers of health.

#### SECTION VI.

##### *Effects of Sanitary Improvements in preventing Attacks of Cholera.*

Having in the preceding pages indicated the chief removable causes of the localization of epidemic cholera in the metropolis, and the defects in existing powers and authorities, I shall conclude this report by adducing some examples of the result of sanitary improvements already in operation, as they are given in the reports of the medical inspectors.

Referring to the Borough, Dr. Greenhow states that, although the cholera deaths have in general been fewer than in 1849, the greatest diminution has occurred in the parish of Christchurch, and in the London road district of St. George's, both of which have been considerably improved, as regards their sanitary condition, since 1849.

The water supply has been improved, and is now the purest in the metropolis. The back streets, courts, and alleys, although very far from being in a good condition, have been greatly amended. Pes-

tiferous ditches have been covered, and many cesspools have been closed over and filled up, the open privies having been converted into trapped waterclosets. All of these sanitary improvements have doubtless been attended by a diminution of the intensity of the epidemic.

In the other districts of St. George's parish, and also in some parts of St. Mary, Newington, local improvements have been carried out, and have been attended with a corresponding diminution of mortality.

So far as could be observed, the severity of the epidemic bore a tolerably correct ratio to the neglect of sanitary measures.

As an illustration of immunity from attacks of cholera following on improvements, Dr. Greenhow mentions a district in St. Saviour's which used to be traversed by an open ditch. The houses along this ditch suffered severely from cholera in 1832, and again in 1849. The ditch has been covered since that date, and the neighbourhood escaped entirely during the late epidemic.

A similar result was obtained by covering one of these ditches which ran behind Wagstaff-buildings, St. Saviour's.

Jackson-court, St. Mary, Newington, suffered from cholera in 1849, but was improved shortly before the late epidemic. The court, houses, and yards were well lime-washed, and the landlord sent some ehloride of lime to each house, to be used as a disinfectant. The neighbourhood was severely visited with cholera, but these houses escaped.

Bull's-gardens, Chelsea, consists of a double row of cottages. Until recently an open ditch, receiving the sewage of the houses, ran through this place, and terminated in the Ranelagh sewer. In 1849, there were 70 cases of diarrhoea, 25 of cholera, and 12 deaths among the inhabitants. Since then, the ditch has been converted into a sewer, and the privies and sinks have been connected with it. Although there is still ample room for sanitary improvement, as is evidenced by the occurrence of diarrhoea in the houses, there has been no death from cholera.

Mr. Walsh states that Jacob's Island, Bermondsey, and its immediate neighbourhood, suffered much less during the late epidemic, notwithstanding its greater severity, than it did during either of the two former visitations, which, he says, is attributable without doubt to the filling up of the foul tidal ditch since the epidemic of 1849.

Dr. Greenhow gives the following examples of sanitary improvements:

Exeter-buildings, Chelsea was formerly notoriously unhealthy, and a focus for epidemic disease. The neighbourhood has been opened up, the privies trapped and flushed daily, the court-yards and interiors of the houses were all lime-washed by the landlord, in anticipation of the cholera. These houses escaped the disease.

St. Mark's College, Chelsea, which is thoroughly drained with pipe drains, and is otherwise in excellent sanitary condition, escaped the epidemic entirely. There was less diarrhoea among the 107 inmates than the usual autumnal average.



The Duke of York's school, Chelsea, is kept in excellent sanitary condition. It contains altogether about 470 inmates; about 30 of these had diarrhœa, but there was no case of cholera.

The Normal school of the British and Foreign School Society, Borough-road, in the midst of an epidemic district, has its sanitary arrangements well attended to, and enjoyed an entire immunity from cholera.

In St. George's, Southwark, are two sets of almshouses, close to Great Suffolk-street. The sanitary arrangements of these houses are far from being perfect, but they are much better than those of the neighbourhood. All the inmates escaped the disease except one, who had been sleeping in an infected part of Kennington, and took cholera immediately on her return.

In Norfolk-street, St. Saviour's, situated in a neighbourhood where there was a great deal of disease, some dwelling-houses were erected on an improved system so as to accommodate 15 families. The sanitary arrangements are tolerably good, and there was no cholera and very little diarrhœa among the inmates.

There is a similar set of improved dwellings in Union-place, Chelsea, occupied by 12 or 13 families. There was cholera directly opposite, but there was no disease except a few cases of diarrhœa in these houses. It is enough to account for the diarrhœa that the Ranelagh sewer passes at no great distance from the houses.

*Lambeth-square.*—After the decline of the cholera, the President of the General Board of Health directed Dr. Fraser to make an inspection and inquiry into the condition of Lambeth-square, to ascertain to what extent the epidemic had prevailed among the population. This inquiry was directed in consequence of certain improvements in drainage having been carried out, subsequent to the epidemic of 1849.

Lambeth-square is situated in the Lower Marsh, Lambeth, not far from Westminster Bridge-road. It contains 35 well-built eight-roomed houses, renting at about 26*l.* a year each, and inhabited by a better class of artizans. At the period of the cholera of 1849, four only of the houses had waterclosets, the remainder having privies, placed over open brick drains in small back yards close to the house doors. The filth from these receptacles was conveyed away by a drain, common to five houses, passing under the middle house to a sewer in front. The smells from those privies were described as being unbearable. In addition to these causes of pestilence in the houses, there were nuisances all round the square. Close to the back walls of the house yards, there were the cesspools of houses in adjoining streets, an abominable filthy cow-yard, dung-heaps, stale fish and vegetables accumulated by costermongers, &c.

It is not surprising, therefore, that notwithstanding the comfortable circumstances of the occupants of these houses, six of them should have died of cholera during the epidemic of 1849.

Both before and subsequently to that year, the inhabitants suffered from various zymotic diseases, and also from a high average mortality. This was especially the case in 1851-52. During twelve months in

these two years, there were 80 attacks of typhus fever, scarlet fever, small pox, &c., and 24 deaths among a population of 434, being in the proportion of two cases of sickness to less than every 11 inhabitants, and one death to every 18 living.

In the beginning of 1852, a memorial was presented to the General Board of Health by the proprietor of the square, stating that for three years past the inhabitants had suffered from typhus fever, and that although 400*l.* per annum was being spent on repairs, drainage, and cleansing, the disease had reappeared. In twenty years the expenses incident to this condition of matters had been 1,250*l.*

A survey was made of the houses, and a complete system of pipe drainage with waterclosets was laid down for every house, at a cost of less than 200*l.* The smells in the houses immediately disappeared, and with them a large amount of sickness and mortality. Unfortunately, however the causes of disease around the houses remain as they were. Dr. Fraser states in his report that the people complain of the smells proceeding from the nuisances already mentioned, and hence the result of the improved house drainage, as indicated by improved health, is not so great as it might have been. The drainage came into operation in July 1852, and Dr. Fraser has given the following as the mortality in the square since July 1850.

| Years.                 | Total Mortality. | Deaths from Zymotic Disease. |
|------------------------|------------------|------------------------------|
| July 1850 to July 1851 | 9                | 3                            |
| July 1851 to July 1852 | 27               | 17                           |
| July 1852 to July 1853 | 8                | 1                            |
| July 1853 to July 1854 | 11               | 2                            |

There was not a single death from cholera in Lambeth-square, during the late epidemic.

The time which has elapsed since the improvements is too short to afford reliable data as to the results, but as far as they go, they show a reduction of mortality of not much less than one-half in the two years succeeding the improvements, as compared with the two years which preceded, while the deaths from zymotic disease have decreased to nearly a seventh part of what they were.

Dr. Fraser mentions that other parts of this district of Lambeth have been improved in health, by the filling up of ditches, and in some cases by the substituting of waterclosets for cesspools.

One of the streets specially mentioned is Francis-street, with a population of 598, in which there were fourteen deaths from cholera in 1849. An open ditch passed close to this street at that period. The ditch has since been converted into a sewer, and the privies have been drained into it, while some of the houses have had waterclosets provided. During the late epidemic only one death from cholera took place in this street, and the case was one imported from Deptford.

Adjoining Francis-street is Hooper-street, in which no improvements have taken place in the privies and cesspools. In this street



there had been eight deaths from cholera at the period of Dr. Fraser's inspection.

The discontinuing of interments in the churchyard of St. John's, Waterloo-road, is also stated to have been followed by a decrease of disease and mortality in its neighbourhood.

The following facts from the report of Dr. Fraser and Messrs. Hughes and Ludlow, on the outbreak of cholera in St. James, Westminster, and St. Ann, Soho, may be adduced as additional illustrations of the beneficial effects of improved drainage:—  
“Nos. 12, 14, 15, 16, 38, and 40, Marshall-street, and 25 and 28, Broad-street, which had been efficiently drained into the new sewer, had all escaped cholera, while, as our tables will show, the surrounding houses had been severely visited.”

The sanitary results of the regulation of common lodging-houses, under the Earl of Shaftesbury's Act, have been so remarkable that it appears necessary to make some allowance for imperfect information on the subject.

These houses used to be dens of filth, disease, and crime, until put under the inspection of the police. Since then over-crowding has been put a stop to, and cleanliness and ventilation are enforced as far as practicable.

Mr. Grainger has shown that in a large unregulated lodging-house in Tindall's-buildings, Gray's Inn-lane, there were, in 1849, fifteen or twenty cases of cholera, and that in thirty lodging-houses in St. Giles' there were twenty-eight deaths from cholera in the same year.

Under the Common Lodging-houses Act, the police have made returns of cases of epidemic disease occurring in houses under their inspection, from which it appears that between the 1st of January and the 1st of October 1854, there were reported twenty-six deaths from cholera, in the registered lodging-houses of the metropolis, the estimated population being 32,000, and in the lodging-houses not registered, but under inspection, there were thirty-five deaths from cholera reported among a population estimated at 50,000. If ample allowance be made for unreported deaths from cholera, there will still remain sufficient proof of the great sanitary improvement that has been effected by the Act.

The parochial authorities of *St. Giles and St. George, Bloomsbury*, state that in their parishes the Common Lodging-houses Act “has effected an amount of good which can scarcely be exaggerated,” but they are desirous that its powers should be extended.

Mr. Walsh states that, in the districts under his inspection, the beneficial effects of the Common Lodging-houses Act were marked, and that in the registered lodging-houses even in the worst districts the state of the privies was very much superior to what it was almost universally in the neighbourhood in a much better class of streets and houses. He says, “It is a fact that exceedingly few cases of cholera occurred in registered common lodging-houses.”

If we now turn to the improved dwellings and model lodging-houses of the metropolis, we shall obtain results equally striking and satisfactory.

In the newly constructed model dwellings and lodging-houses, all the evils and neglects existing in the same class of dwellings in other parts of the metropolis are as far as possible avoided.

There are neither cesspools, ashpits, nor nuisances; all the houses have waterclosets; and there is an abundant water supply, and suitable means of ventilation are provided.

The same improvements have been extended to the altered houses as far as it was practicable, and the results as regards the late epidemic cholera, for the seven establishments belonging to the Society for the Improvement of the Dwellings of the Labouring Classes, are thus stated in a communication received from the secretary.

1st. Model-houses for families, Streatham-street, Bloomsbury, 53 families, numbering 306 inmates, amongst whom six cases of diarrhœa have occurred, all of which speedily yielded to medical treatment.

2d. Thanksgiving model-buildings, Portpool-lane, Gray's Inn-lane, 26 families, and 66 females, or 166 inmates. Not a single case of sickness.

3d. Model-buildings, Bagnigge-wells, 23 families and 30 aged females, or 175 inmates. Not one case of sickness.

4th. Model lodging-house, George-street, St. Giles', 104 inmates, without a case of either disease.

5th. Model lodging-house, Charles-street, Drury-lane, 82 inmates, five cases of diarrhœa, very slight, and these were confined to men employed in the neighbourhood of the Tower and docks, and returned unwell. One case of cholera occurred, which can hardly be said to have been contracted in the house, as the individual had suffered from 19 days neglected diarrhœa, and was in a state of great destitution. He died at King's-college hospital.

6th. Model lodging-house, King-street, Drury-lane, 25 inmates, not a case of either disease.

7th. Hatton-garden chambers, Hatton-garden, 28 inmates, but having accommodation for 58. No sickness whatever.

The houses numbered 4, 5, 6, and 7 are for single men.

Mr. George Glover, who was requested by the President of the General Board of Health to inspect the model lodging-houses of the metropolis after the decline of the epidemic, has reported in regard to the buildings belonging to the Metropolitan Association, that in the Old Pancras-road buildings, containing a population of 693 persons, there was no cholera, but a few slight cases of diarrhœa, only four of which required medical treatment.

In the Soho chambers, with an average nightly population of 88, there was no cholera during the epidemic, and only seven cases of diarrhœa. This house is situated in the immediate vicinity of the houses so frightfully visited by cholera in the parish of St. James, Westminster.

In the premises in Pelham-street and Pleasant-row, with an average population of 120, there have been no deaths either from cholera or diarrhœa.

In the Albert-street chambers, Spitalfields, a lodging-house with



an average population of 200, there were three cases of diarrhoea and two cases of cholera. One of the cases, however, was taken ill in Smithfield market and was removed to the London hospital, where he recovered.

The other case, which proved fatal, took place in a man lodger who ate stale crab, offensive to the smell, for supper and breakfast, and fell a victim to an error of diet which no improved sanitary condition could neutralize.

In Albert-street dwellings for families, containing 354 inhabitants there were three slight cases of diarrhoea, but there were four deaths from cholera, all confined to one family, which shows that there must have been some peculiar cause at work in that one case.

This family consisted of a man, his wife, and eight children, who occupied a house of three small rooms, which allowed only  $276\frac{1}{2}$  cubic feet of sleeping space for each individual. Now experience has shown that during cholera epidemics, about 500 cubic feet are required for safety. Mr. Glover considers it probable that inefficient nourishment had also much to do with the attack.

Besides the model dwellings belonging to the two societies, there is a street of 80 tenements, in St. Georges in the East, built on the plan proposed by His Royal Highness Prince Albert, and shown in Hyde-park, at the Great Exhibition of 1851. They occupy the site of some property the inhabitants of which suffered most severely from cholera in 1849. These dwellings contain a population of about 450, and they all escaped the epidemic.

The experience so far as concerns the results of sanitary improvements is most satisfactory, although it also shows that other things require to be attended to in order to ensure security from epidemic disease.

## SECTION VII.

### *Conclusions.*

The facts in the preceding report appear to me to warrant the following conclusions:—

1. The chief causes which have localized epidemic cholera during the late and previous epidemics are known and removable.
2. However beneficial any temporary sanitary measures may be, such temporary measures are not enough to ward off attacks of pestilence, and that permanent sanitary works and arrangements are necessary.
3. That there is no local authority except in the city of London having the necessary powers for executing permanent works, and that new local authorities with adequate powers are requisite for the public safety.
4. That such new local authorities, besides carrying forwards the permanent sanitary improvement of the metropolis, should be intrusted with powers, under supervision of the General Board of Health, for providing houses of refuge, house to house visitation, and other similar measures required for the protection of the working-classes during extraordinary seasons of pestilence.

TABLE I.  
Weekly Statistics of MORTALITY from CHOLERA, DIARRHŒA, and other  
Zymotic Diseases during the Epidemic of 1854.

| Weeks ending | Cholera. | Diarrhœa. | Typhus. | Zymotics. | All Causes. |
|--------------|----------|-----------|---------|-----------|-------------|
| January 7    | 2        | 22        | 43      | 284       | 1,444       |
| „ 14         | 2        | 27        | 49      | 280       | 1,492       |
| „ 21         | 1        | 27        | 44      | 253       | 1,195       |
| „ 28         | 0        | 30        | 51      | 230       | 1,178       |
| February 4   | 1        | 31        | 42      | 263       | 1,204       |
| „ 11         | 1        | 20        | 53      | 262       | 1,178       |
| „ 18         | 0        | 24        | 47      | 248       | 1,154       |
| „ 25         | 0        | 28        | 50      | 257       | 1,334       |
| March 4      | 0        | 20        | 31      | 215       | 1,135       |
| „ 11         | 0        | 19        | 52      | 254       | 1,343       |
| „ 18         | 0        | 22        | 39      | 217       | 1,188       |
| „ 25         | 0        | 22        | 41      | 246       | 1,200       |
| April 1      | 0        | 16        | 40      | 245       | 1,489       |
| „ 8          | 0        | 22        | 47      | 264       | 1,149       |
| „ 15         | 2        | 18        | 59      | 254       | 1,087       |
| „ 22         | 2        | 26        | 46      | 298       | 1,193       |
| „ 29         | 0        | 19        | 56      | 289       | 1,211       |
| May 6        | 0        | 25        | 51      | 303       | 1,263       |
| „ 13         | 0        | 10        | 47      | 252       | 1,093       |
| „ 20         | 2        | 17        | 56      | 301       | 1,188       |
| „ 27         | 0        | 31        | 43      | 282       | 1,143       |
| June 3       | 2        | 22        | 57      | 309       | 1,090       |
| „ 10         | 1        | 31        | 64      | 306       | 1,110       |
| „ 17         | 1        | 31        | 61      | 287       | 1,085       |
| „ 24         | 1        | 38        | 63      | 301       | 1,153       |
| July 1       | 0        | 25        | 47      | 249       | 1,290       |
| „ 8          | 1        | 32        | 44      | 253       | 984         |
| „ 15         | 5        | 46        | 51      | 270       | 1,015       |
| „ 22         | 26       | 58        | 43      | 293       | 1,008       |
| „ 29         | 133      | 84        | 40      | 422       | 1,219       |
| August 5     | 399      | 142       | 44      | 731       | 1,456       |
| „ 12         | 644      | 195       | 53      | 1,069     | 1,832       |
| „ 19         | 729      | 192       | 45      | 1,112     | 1,833       |
| „ 26         | 847      | 214       | 54      | 1,296     | 2,039       |
| September 2  | 1,277    | 243       | 51      | 1,732     | 2,515       |
| „ 9          | 2,050    | 276       | 67      | 2,558     | 3,413       |
| „ 16         | 1,549    | 232       | 58      | 2,026     | 2,836       |
| „ 23         | 1,284    | 190       | 71      | 1,717     | 2,504       |
| „ 30         | 754      | 165       | 57      | 1,144     | 2,216       |
| October 7    | 411      | 98        | 88      | 777       | 1,532       |
| „ 14         | 249      | 102       | 53      | 610       | 1,394       |
| „ 21         | 163      | 78        | 58      | 495       | 1,321       |
| „ 28         | 66       | 46        | 53      | 371       | 1,228       |
| November 4   | 31       | 33        | 62      | 359       | 1,252       |
| „ 11         | 23       | 35        | 54      | 309       | 1,160       |
| „ 18         | 12       | 31        | 54      | 332       | 1,309       |
| „ 25         | 8        | 21        | 47      | 332       | 1,262       |
| December 2   | 7        | 19        | 52      | 298       | 1,350       |
| „ 9          | 5        | 19        | 49      | 328       | 1,331       |
| „ 16         | 2        | 25        | 52      | 330       | 1,300       |



TABLE II.

Showing the comparative MORTALITY from CHOLERA during the Epidemics of 1832.\* 1849 and 1854, for each Parish and Union in the Metropolis.

| Unions and Parishes.                            | Epidemics of Cholera. |            |                    |                     |         |                    |                     |         |                    |
|---|-----------------------|------------|--------------------|---------------------|---------|--------------------|---------------------|---------|--------------------|
|   | 1854.                 |            |                    | 1849.               |         |                    | 1832-33.            |         |                    |
|   | Population<br>1851.   | Dths.<br>- | Deaths<br>per1,000 | Population<br>1849. | Deaths. | Deaths<br>per1,000 | Population<br>1831. | Deaths. | Deaths<br>per1,000 |
| Paddington -                                    | 46,305                | 93         | 2.0                | 41,267              | 35      | 0.8                | -                   | -       | -                  |
| Kensington and<br>Brompton -                    | 44,053                | 186        | 4.2                | 68,425              | 225     | 3.3                | 52,981              | 52      | 1.0                |
| Hammersmith -                                   | 17,760                | 117        | 6.0                |                     |         |                    |                     |         |                    |
| Fulham -  | 11,886                | 93         | 7.7                |                     |         |                    |                     |         |                    |
| Chelsea -                                       | 56,538                | 297        | 5.2                | 53,379              | 247     | 4.6                | 32,371              | 272     | 8.0                |
| St. George, Han-<br>over-sq. -                  | 73,430                | 294        | 4.0                | 71,672              | 131     | 1.8                | 58,209              | 74      | 1.0                |
| St. John and St.<br>Margaret, West-<br>minster. | 65,609                | 420        | 6.4                | 64,109              | 437     | 6.8                | -                   | -       | 5.0                |
| Westminster -                                   | -                     | -          | -                  | -                   | -       | -                  | 85,220              | 450     | 5.0                |
| St. Martin-in-the-<br>Fields -                  | 24,640                | 58         | 2.3                | 24,557              | 91      | 3.7                | 23,970              | -       | 0.02               |
| St. James', West-<br>minster -                  | 36,406                | 484        | 13.0               | 36,426              | 57      | 1.6                | -                   | -       | -                  |
| Marylebone -                                    | 157,896               | 344        | 2.1                | 153,960             | 261     | 1.7                | 122,206             | 355     | 3.0                |
| Hampstead -                                     | 11,986                | 14         | 1.1                | 11,572              | 9       | 0.8                | 8,588               | -       | -                  |
| St. Pancras -                                   | 166,956               | 240        | 1.4                | 160,122             | 360     | 2.2                | 103,548             | 230     | 2.0                |
| Islington -                                     | 95,329                | 94         | 0.9                | 86,761              | 187     | 2.2                | 37,316              | 39      | 1.0                |
| Hackney -                                       | 58,419                | 71         | 1.2                | 55,152              | 139     | 2.5                | 34,527              | 8       | 0.2                |
| St. Giles and St.<br>George, Blooms-<br>bury -  | 54,214                | 116        | 2.1                | 54,062              | 285     | 5.3                | 52,907              | 280     | 5.0                |
| Strand -  | 44,460                | 109        | 2.4                | 44,254              | 156     | 3.5                | 42,015              | 26      | 0.06               |
| Holborn -                                       | 46,621                | 25         | 0.5                | 46,134              | 161     | 3.5                | 42,696              | 46      | 1.0                |
| Clerkenwell -                                   | 64,778                | 58         | 0.9                | 63,499              | 121     | 1.9                | 47,634              | 65      | 1.0                |
| St. Luke -                                      | 54,055                | 50         | 0.9                | 53,234              | 183     | 3.4                | 46,642              | 118     | 3.0                |
| East London -                                   | 44,406                | 85         | 1.8                | 43,495              | 182     | 4.5                | 123,608             | 605     | 5.0                |
| West London -                                   | 28,790                | 125        | 4.3                | 28,829              | 429     | 9.6                |                     |         |                    |
| City of London -                                | 55,932                | 71         | 1.2                | 55,816              | 207     | 3.8                |                     |         |                    |
| Shoreditch -                                    | 129,257               | 238        | 1.8                | 104,122             | 789     | 7.6                | 68,564              | 57      | 1.0                |
| Bethnal Green -                                 | 90,293                | 190        | 2.1                | 87,263              | 789     | 9.0                | 62,018              | 345     | 5.0                |
| Whitechapel -                                   | 79,759                | 329        | 4.0                | 78,590              | 506     | 6.4                | 64,141              | 736     | 11.0               |
| St. George's-in-the-<br>East -                  | 48,376                | 154        | 3.0                | 47,334              | 199     | 4.2                | 38,505              | 123     | 3.0                |
| Stepney -                                       | 110,775               | 381        | 3.4                | 106,988             | 501     | 4.7                | 72,442              | 358     | 5.0                |
| Poplar -  | 47,182                | 208        | 4.0                | 44,103              | 313     | 7.1                | 25,066              | 101     | 4.0                |
| St. Saviour's, South-<br>wark -                 | 35,731                | 492        | 13.8               | 35,227              | 539     | 15.3               | 91,501              | 1,128   | 12.0               |
| St. Olave -                                     | 19,375                | 313        | 15.6               | 19,278              | 349     | 18.1               |                     |         |                    |
| St. George, South-<br>wark -                    | 51,824                | 543        | 10.4               | 50,900              | 836     | 16.4               |                     |         |                    |
| Bermondsey -                                    | 48,128                | 838        | 17.0               | 45,500              | 734     | 16.1               | 29,741              | 210     | 7.0                |
| Newington -                                     | 64,816                | 694        | 10.6               | 63,074              | 907     | 14.4               | 44,526              | 200     | 4.0                |
| Lambeth -                                       | 138,325               | 932        | 6.7                | 134,768             | 1,618   | 12.0               | 87,856              | 337     | 4.0                |
| Wandsworth -                                    | 50,764                | 421        | 8.0                | 48,446              | 484     | 10.0               | 33,090              | 46      | 1.0                |
| Canterbury -                                    | 54,667                | 553        | 10.0               | 51,704              | 504     | 9.7                | 28,231              | 107     | 3.0                |
| Rotherhithe -                                   | 17,807                | 284        | 15.7               | 17,208              | 352     | 20.5               | 12,875              | 19      | 1.0                |
| Greenwich -                                     | 99,365                | 567        | 5.6                | 95,954              | 718     | 7.5                | 63,564              | 149     | 2.0                |
| Lewisham -                                      | 35,835                | 75         | 2.0                | 32,299              | 96      | 3.0                | 18,426              | -       | -                  |

\* I have copied the data for the epidemic of 1832-3, from Mr. Grainger's report on the cholera of 1849, with the same reserve he makes, namely, that it is only an approximation, on account of the imperfection of the records.

TABLE III.

Total number of CASES of DIARRHOEA and CHOLERA returned to the General Board of Health, as having been treated in the following Parishes and Unions during the Epidemic of 1854.

| Union or Parish.                     | Diarrhoea.       |                      |           | Cholera.         |                     |           |   |
|--------------------------------------|------------------|----------------------|-----------|------------------|---------------------|-----------|---|
|                                      | Dispen-<br>sar . | Medical<br>Officers. | Visitors. | Dispen-<br>sar . | Medical<br>Officers | Visitors. |   |
| Lambeth - - -                        | -                | 3,364                | -         | -                | 427                 | -         |   |
| East London - -                      | -                | 1,514                | -         | -                | 53                  | -         |   |
| St. Luke, Middlesex -                | 152              | 121                  | -         | -                | 12                  | -         |   |
| West London - -                      | -                | 951                  | -         | -                | 13                  | -         |   |
| Shoreditch . - -                     | -                | 1,729                | -         | -                | 105                 | -         |   |
| Bethnal Green - -                    | -                | 409                  | -         | -                | 65                  | -         |   |
| Hackney - - -                        | -                | 716                  | -         | -                | 16                  | -         |   |
| St. James, Westminster               | -                | 2,601                | -         | -                | 237                 | -         |   |
| Strand - - -                         | -                | 4,336                | -         | -                | 43                  | -         | Including cases discovered by house-to-house Visitors.                |
| Islington - - -                      | -                | 2,895                | -         | -                | 67                  | -         |   |
| Camberwell - - -                     | 2,211            | 5,919                | -         | -                | 305                 | -         |   |
| St. Saviour's - - -                  | 924              | 432                  | 338       | 15               | 102                 | 81        |   |
| Bermondsey - - -                     | 256              | 117                  | 30        | -                | 39                  | -         |   |
| St. Luke, Chelsea - -                | -                | 2,564                | 1,323     | -                | 146                 | 15        |   |
| Whitechapel - - -                    | 1,396            | 1,409                | 163       | 26               | 137                 | 30        | From 10th August to 23d October. First Visitor's Return on 15th Sept. |
| St. Mary, Newington -                | 394              | 3,569                | 949       | 4                | 341                 | 77        |   |
| St. George the Martyr                | -                | 984                  | 410       | -                | 70                  | 12        | August 8th to October 7th. First Visitor's Return on 16th Sept.       |
| Fulham - - -                         | -                | 1,670                | 487       | -                | 449                 | 70        |   |
| Stepney Union - - -                  | 4,463            | 1,563                | 2,584     | -                | 311                 | 140       | August 5th to October 1st. First Visitor's Return on 11th Sept.       |
| Poplar Union - - -                   | 4,577            | 4,000                | 1,322     | -                | 435                 | 56        |   |
| St. Giles and St. George, Bloomsbury | -                | 4,061                | -         | -                | 120                 | -         | Including cases discovered by house-to-house Visitors.                |
| Holborn - - -                        | -                | 2,600                | -         | -                | 38                  | -         |   |



## A P P E N D I C E S.

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### INSTRUCTIONS to LOCAL AUTHORITIES on PREVENTIVE MEASURES in relation to EPIDEMIC CHOLERA, under the NUISANCES REMOVAL ACTS.

THE main object of the Board in framing the accompanying Instructions has been to embody, in a form adapted to practical use, the results of experience as to the best means of meeting an outbreak of epidemic cholera.

One of the preventive measures recommended by the Board—that denominated “House-to-house Visitation,” is based on the belief entertained by the medical profession, that by treating every case of diarrhoea which may be discovered among the population of a town or district visited by cholera, the ravages of this fatal disease may be to a large extent mitigated. It is well known that where cholera is epidemic, diarrhoea, usually painless, almost always prevails very extensively; and it is also known that diarrhoea of the same character usually precedes—sometimes for a few hours, sometimes for several days—the alarming symptoms which constitute developed cholera. Now the prevalent diarrhoea, in a vast majority of cases, yields to remedial measures promptly applied; and it is believed that if they had been neglected, many cases of diarrhoea thus arrested would have passed into developed cholera. As long, therefore, as cholera shows itself so difficult of cure, every plan which proposes to deal with an outbreak of this fearful disease *must provide for the immediate treatment of all cases of diarrhoea.*

It may, perhaps, at first sight appear that in order to effect the proposed object it would be sufficient to impress the foregoing plain and obvious facts upon the public, by means of placards and notices; to provide dispensaries where the poor might be supplied gratuitously with the requisite medicines, and to leave the rest to the common sense of the people. But it must be remembered that diarrhoea is a very common disease; and when painless attracts little notice, or is regarded as of no consequence. It must further be borne in mind that the principal sufferers from epidemic cholera belong to a class whose habits of life are peculiarly calculated to render them unwilling to anticipate misfortune. They may, perhaps, be taught that the filth, intemperance, and wretchedness in the midst of which they so generally live, render them peculiarly susceptible

to the worst forms of any prevalent pestilence ; but unfortunately that which is the source of their danger is also the cause of their apathy. The trials which fill their thoughts are those of the day and of the hour. The pressing necessity of struggling with actual suffering begets generally a reckless indifference to merely contingent evils ; and thus it has been found that even when cholera is raging in an overcrowded alley or filthy undrained court, the poor inhabitants, neglecting the commencement of the disease (which it must be recollected is without pain), rarely apply for medical aid until the disease has reached that stage when medicine is all but unavailing.

As therefore experience has shown that the poor cannot in general be induced to seek medical aid in good time, it is of the utmost importance that medical aid should seek them. This object the Board propose to effect by the system of what is called house-to-house visitation.

The Board believe that the detailed exposition of this system about to be given will afford to local authorities all the information necessary to enable them, in their respective districts, themselves to carry it into efficient operation.

Circumstances may occur under which local authorities may stand in need of counsel, and possibly even of the temporary assistance of a medical officer of the Board. The Board will deem it their duty promptly to render such assistance, as far as may be in their power whenever real occasion for it may arise ; but it is equally the duty of local authorities resolutely to avail themselves of the means of preparation within their own power, and to place their dependence, not on Government aid, but rather on their own energy, vigilance, and foresight.

The instructions here given contain ample information as to the manner in which the preventive measures in general, and the house-to-house visitation in particular, may be best conducted, and as to the machinery by which it may be most successfully worked.

If the several Boards of Guardians and other local authorities throughout the country forthwith make the requisite preparation for enabling them to carry into effect, at a day's notice if necessary, the measures here recommended, according as these fall within their respective spheres of duty, every corner of the country will be furnished with a far more powerful protection against the visitation of cholera than any Government department, however vigilant and zealous, can possibly supply ; whilst the sense of security which will then pervade the entire community will strip the disease of half its terrors. On the other hand, if Boards of Guardians and other local authorities should neglect the plain and obvious duties hereby imposed upon them, they must bear in mind that the responsibility of all the suffering and loss of life which may be occasioned by such neglect, will, after this notice, attach exclusively to themselves.

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## PROVISIONS OF NUISANCES REMOVAL ACT.

The Nuisances Removal and Diseases Prevention Act, 1848, includes two sets of provisions ; the one permanent, the other put in operation by an Order in Council issued under the 9th section.

The instructions which follow refer entirely to the latter, as it is under that alone that the General Board of Health exercises any power by the Act for the prevention or mitigation of epidemic disease. In dealing with these instructions it should be understood,—

1st. That *all local authorities*, having by law powers for abatement of nuisances, are called upon by the regulations and directions of this Board actively to exercise those powers, and that Boards of Guardians act only in default of such local authorities. Besides local authorities, owners and occupiers, and all others having control of premises, are charged by the Board's regulations with duties of cleansing, &c., which the Guardians should make known by handbills circulated through the Union.

2d. That the word "Guardians" in the following instructions, includes all official bodies having the management of the poor.

3d. That the authorities for administering the Poor Law in England, Scotland, and Ireland have the same power of enforcing the duties imposed on Guardians by the Nuisances Removal Act, as they have of enforcing the duties imposed on them by the laws relating to the relief of the poor. (s. 12, Nuisances Removal Act, 1848.)

4th. That, for the execution of the instructions and directions of the General Board, the Guardians may appoint or employ officers, or persons in aid of their ordinary officers, and may defray the expenses incurred in execution of those regulations and directions out of the funds of their unions, parishes, or respective combinations (section 14, Nuisances Removal Act, 1848), or out of the parochial funds, without any order of justices, when the cost does not exceed 20s., and when it exceeds that sum, on an order of justices (or, in Scotland, of two justices, or of the sheriff or magistrates), (s. 8, Nuisances Removal Act, 1849.) The Guardians may thus exercise a discretion as to charging the cost on the parish or union fund.

They should be guided in this discretion by the extent of the evil and the origin of the nuisance. If the former be general, the cost of removal may properly be thrown on the common fund. If the latter be local, it would seem (unless the relief by removal of the nuisance be general) to be right to throw the expense on the parish.

5th. That Guardians and their officers, or persons authorized by them, may enter on any premises where there is ground for believing that necessity may exist or arise for executing the directions and regulations of the General Board of Health. (s. 13, Nuisances Removal Act, 1848.)

DUTIES of LOCAL AUTHORITIES (other than BOARDS of GUARDIANS),  
Owners, Occupiers, and Persons having Control of Premises.

1. *Cleansing of Streets and Public Places.*

All surveyors, district or assistant surveyors of highways, trustees, county surveyors, and others by law entrusted with the care and management of streets and public ways and places, and where there are no public authorities so entrusted, the owners and occupiers of houses and tenements adjoining thereto, are to take the measures necessary for the frequent and effectual cleansing thereof.

2. *Cleansing, Ventilating, &c. of Private Premises and Buildings.*

The owners and occupiers, and persons having the care and ordering of all houses, dwellings, churches, buildings, and places of assembly, are to cleanse, purify, ventilate, and disinfect the same.

3. *Removal of Nuisances.*

All local authorities and persons whatsoever are to exert all the powers vested in them by law for the removal of nuisances.

4. *Speedy Interment.*

All relations of, or others in charge of the bodies of persons who have died of cholera or other epidemic disease, are to obey the directions of the medical officers of the guardians, as to the speedy interment of the dead.

The word "Guardians," as here used, means the guardians, directors, wardens, governors, parochial board, or other like officers having the management of the poor of any union, parish, combination, or place where the matter requiring the cognizance of any such officers arises, and the expression "Local Authority" means the town council, local board of health, or any trustees or commissioners for the draining, paving, lighting, cleansing, managing or directing the police of any town, borough, or place, highway board, or any other body of a like nature, or any commissioners of sewers, or any body, excepting boards of guardians and overseers, having by law powers for the removal of nuisances.

The Guardians of the poor, as superintendents of the execution of the directions and regulations of the General Board of Health, have to perform two classes of service. The first relates to cleansing duties; the second, to duties of medical precaution and relief. Both should be entered upon before the epidemic actually appears.

CLASS I.—DUTIES OF GUARDIANS IN RELATION TO CLEANSING AND  
REMOVING NUISANCES.

1. *Lists of Epidemic Localities.*

Direct the Clerk to make out, or cause to be made out, from the medical officers' books or other sources of information, a list\* of the

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\* The books of the medical officers will necessarily afford much information, but the experience of the relieving officers in the haunts of poverty and disease will likewise enable them to indicate dangerous localities. [The



places within the union, where cases of cholera, diarrhoea, typhus fever, or any epidemic or endemic disease are most commonly found.

Give the list or portions of the list relative to particular districts to the several district medical officers, and require them to visit the places within the districts named in such list, and any other places within it, and examine the houses situate in places where disease may be expected to appear, as to their present condition in respect to cleanliness, or as to any existing predisposing causes of disease likely to affect the inmates.

## 2. *Certificates of Places other than Private Premises requiring Cleansing.*

Direct the medical officers to certify in writing to the Guardians all such places as are in a state dangerous to health, or need frequent and effectual cleansing by way of preservation against disease, and such dwelling-houses as are in a filthy and unwholesome condition, and all such nuisances and matters injurious to health as ought to be cleansed, abated, and removed, in execution of the directions of the General Board.

Direct the medical officers to certify in writing all the streets, rows, lanes, mews, courts, alleys, and passages, and public ways and places in the union, under the care of town councils, local boards of health, commissioners, trustees or surveyors, which are in a state dangerous to health, or require frequent cleansing by way of precaution against disease.—(Appendix 2, F.)

Direct the medical officer to certify in writing all streets, rows, lanes, mews, courts, alleys, and any passages, public ways, or places to which any houses or tenements adjoin, not intrusted by law to the care or management of any town council, local board of health, commissioners, surveyors, trustees, or others, which are in a state dangerous to health, or require such frequent cleansing.—Appendix 2, F.)

## 3. *Enforcement of Cleansing under Certificates.*

Having received these certificates of the medical officers, ascertain who are the parties by law intrusted with the care and management of the streets and public places included in Certificate

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The records of past outbreaks of cholera, where they have been preserved, will point out the localities formerly affected, and the registry of deaths will indicate the localities which suffered most.

At Newcastle an important table has been prepared, showing the numbers of deaths from cholera in each street, &c., during the recent epidemic. There can be but few occasions which will not permit of similar tables being prepared.

Where there are dispensaries and hospitals which provide out-door attendance, the records of these institutions will likewise indicate the localities where disease ordinarily prevails.

By consulting these sources of information, the clerk, or the person specially appointed to perform his duty, will be enabled to compile a tolerably accurate list of the nests of epidemic disease.

No. 1; send them copies of the certificate, and require them, in obedience to the 5th direction of the General Board, "to see "to the effectual and continued cleansing of all streets, rows, "lanes, mews, courts, alleys, and passages, and public ways and "places under their respective care and management; and to "the removal of all filth, ordure, and nuisances therefrom," under a penalty, in case of default, not exceeding 5*l*.\*

Warn, by printed notice, the inhabitants of the localities specified in Medical Certificate (App. 2 F.) that every occupier of a house or tenement adjoining these localities is bound by law to keep or cause to be kept sufficiently cleansed every part of the street, row, lane, mews, courts, alley, or passage, way or place, which adjoins the house or tenement occupied by him, under a penalty, in case of default, not exceeding 5*l*.\*

The medical officer having, where necessary, directed how or with what precautions the cleansing shall be done, and the nuisances removed, will inform the inhabitants that it is farther required, by the directions of the General Board, that "works of cleansing, and "removal of filth, ordure, and nuisances required shall be done by "effectual washing or otherwise, and with the use of fluids or "substances for preventing the escape of noxious effluvia during "the operation, when the medical officer of the Guardians, or others "authorized to superintend the execution of these directions and "regulations shall prescribe the same."

Having thus notified to the proper parties the duties required to be done by them, proceed by yourselves or by your officers or persons already employed by you, or to be specially appointed by you for this purpose, to superintend and see to the execution of the foregoing directions and regulations in all places within your jurisdiction.

Having, in the execution of the previous duty, ascertained how far the directions of the General Board have been executed, it is your duty, in default of action by bodies or persons legally responsible, yourselves to cause the places included in both certificates to be effectually cleansed, and all nuisances to be removed therefrom.

#### *4. Proceeding for Penalty against Defaulters.*

In all cases where the default is culpable, and the parties guilty of it can be got at, proceed for a penalty not exceeding 5*l*., under the 16th section of the Nuisances Removal and Diseases Prevention Act, 1848. (11 & 12 Vict. c. 23.)

The preceding instructions relate entirely to out-door nuisances in streets and public places.

Those which follow relate to nuisances in houses and on private premises, and should be carried out at the same time as the pre-

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\* For the mode of recovering this penalty see Nuisances Removal Act, 1848, sec. 16



ceding duties, the inspector of nuisances guiding the attention of the medical officer where necessary.

As introductory to the duties which follow, it may be pointed out that, should any complaint of a nuisance under the permanent powers of the Nuisances Removal Act, signed as required by the Act, be preferred to any local authority having cleansing powers,\* not being a Board of Guardians, the local authority may proceed at once in its abatement, under the Act, though an Order in Council be in force, and if such a complaint be made to the guardians, they may forward the complaint to the local authority, to be proceeded with under the Act, or if there have already been default on the part of the local authority, may themselves take proceedings, under the regulations of the General Board of Health.

In this case they cannot recover expenses incurred, but may proceed for a penalty under the 16th section of the Act of 1848.

Inspectors of nuisances should be required to make periodical returns of their inspections in books prepared for this purpose (see Appendix 2, F.), and should be furnished with all the necessary notices.†

It too commonly happens that persons are appointed inspectors of nuisances who have neither the physical nor the mental requisites for this really important office, which can hardly be filled efficiently (according to a proper conception of it) by any but a person of medical knowledge, while, for anything like satisfactory discharge of its duties, a good general education, business habits, and some practical knowledge of the simplest and most economical means of cleansing, deodorizing, ventilation, &c., are indispensable.

The inspector of nuisances should be thoroughly instructed by the legal adviser of the Board as to his powers and the forms of procedure.

Lime-washers should be employed to perform the work of lime-washing in a regular manner, until it is completed wherever required.

The lime-washing should be lime-washing strictly so called, and not whitewashing.

The lime should be applied as soon after burning as possible.

##### *5. Cleansing and Removal of Nuisances on Private Premises.*

Direct your inspector of nuisances to examine the houses in the district, and to make a list of all dwelling-houses in such a filthy and unwholesome state as to be a nuisance or injurious to health; and all drains, ditches, gutters, water-courses, privies, cesspools or ashpits, kept or constructed so as to be a nuisance or injurious to health; and all cases in which swine or any other animal, or

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\* That is, a town council, improvement commissioners, or board of guardians, as the case may be.

† Which may be procured of Mr. C. Knight, 90, Fleet Street, London, publisher to the General Board.

any accumulation of dung, manure, offal, filth, refuse, or other matter or thing are kept so as to be a nuisance or injurious to health, and to report the cases to you.

Give notice of all nuisances so reported to the owner or occupier, or person having the care of the premises, or person causing the nuisance (according to the nature of the nuisance), and require them forthwith to cleanse, whitewash, ventilate, or otherwise purify, as the case may require, such dwelling-house, or premises, or otherwise abate or remove the nuisance or matter injurious to health; and if *they neglect to do so, do the work yourselves*, and proceed against the defaulter for a penalty under the 16th section.\*

Among these duties, that of enforcing ventilation is particularly important. The most fertile source of disease is the impure state of the air which results from the crowding of many persons within ill-ventilated rooms. *Not only in the dirty dwellings of the poor, but in union workhouses, other public establishments, and public lodging-houses, which present to the eye no appearance of dirt, and where drainage is not defective, the air often becomes unwholesome, from the great number of persons breathing in it, or from the means of ventilation being deficient.* In these cases, either the numbers of the occupants of the rooms should be much diminished, or a system of free ventilation should be at once introduced and enforced.

The vagrant wards of workhouses and low lodging-houses frequented by vagrants should be narrowly watched; for these are places in which cholera is apt to be fostered, and whence it may be disseminated widely amongst the surrounding population. In these establishments, then, the most scrupulous cleanliness and free ventilation should be maintained; and even the personal cleanliness of the inmates, as far as possible, enforced.

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## CLASS II.—DUTIES IN RELATION TO MEDICAL PRECAUTION AND RELIEF.

The Clerk of every Board of Guardians on receiving copies of the present minute, should immediately send a copy to each of the medical officers of the Board, and to each of the relieving officers. He should also without delay procure such additional copies† as may be required to furnish each member of the Board of Guardians with one copy.

The Clerk should also, after a conference with the chairman of his Board, fix an early day for submitting this minute to a meeting

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\* If an owner neglect to provide a privy or drain, or the nuisance arising from the want of either is due to the owner, the notice to remove it should be made on him. But if he have provided these, and the carelessness of the occupier have caused the nuisance, the notice should be served on the occupier.

† Any number of copies may be obtained by application in writing to Mr. C. Knight, 90, Fleet-street, at a trifling cost.



of the Board, and for taking into consideration the suggestions contained therein.

At such meeting the Board should direct the clerk to require each of the district medical officers of the Board to furnish him, as soon as possible, with a carefully prepared list, in duplicate, of the several localities, in their respective districts, which are the usual seats of fever or other sickness in ordinary seasons, and which generally suffer most severely on the occurrence of any prevalent epidemic.

The district medical officers should also be strictly enjoined to furnish the clerk with the earliest possible intelligence of the appearance of any case of cholera, or of disease of a choleraic character, within their respective districts, or of such a general prevalence of diarrhoea as may seem to indicate an approaching outbreak of the epidemic. At the same time the other resident medical men of the town or district should be requested to do the same; as it may happen that the earliest cases may not occur to the parochial medical officer.

At this meeting, measures should be taken to ensure the services of a sufficient medical staff to carry into effect, in case of need, the system of house-to-house visitation. This staff should consist of a medical superintendent, of medical officers, one or more, and of house-to-house visitors. With reference to the house-to-house visitors it may be sufficient, as long as there is no actual outbreak, to have ascertained where these can be obtained when required; but the selection of the medical superintendent and the medical officer or officers should be proceeded with at once. Not only should the selection of the requisite number of medical men for these services be made at the earliest possible moment, but the scale of remuneration for such services should be fixed, and means should be taken to ascertain whether the persons so selected would be ready at a day's notice, and on the proposed terms, to undertake the functions respectively assigned to them, and whether their services may be relied upon as transferable to any district or locality in which the disease may prevail.

By the timely adoption of this course, the Board of Guardians, on the appearance of epidemic cholera in any part of their district, will be enabled, without delay on the one hand, or undue precipitation on the other, to call into active service just so much of their previously constituted medical staff as may suffice to deal with the particular emergency.

#### QUALIFICATIONS OF OFFICERS.—1. *Medical Superintendent.*

The medical superintendent should be a legally qualified and experienced member of the profession. It is desirable that he should be a resident within the jurisdiction of the Board of Guardians by whom he is employed, since that circumstance may have already furnished him with several important qualifications for his work;

as, for instance, an acquaintance with the localities affected; a familiarity with the habits of the resident poor; and a knowledge of the medical resources of each district.

It may happen that amongst the competent local practitioners none can be found whose private professional engagements will admit of his devoting himself entirely to the absorbing duties which during the prevalence of an epidemic, must devolve upon the medical superintendent. In this case, the Board of Guardians must endeavour to engage the services of a non-resident medical man.

Whenever the adoption of this course becomes a matter of necessity, it is especially important that the appointment should be speedily made, in order that the person engaged may have time to prepare himself for the efficient discharge of his duty on the first summons.

If a sudden outbreak of epidemic cholera should find a Board of Guardians unprovided with the services of a competent medical superintendent, the General Board will be prepared to recommend such an officer on receiving from the Guardians an application to that effect. Such an application may be made by telegraphic message, and it should distinctly specify the remuneration intended to be given.\*

## 2. *Medical Officer.*

Whenever cholera becomes epidemic in any district of considerable extent, it will be found an economy of time and money as well as conducive to the prompt and proper care of the sick, to appoint a legally qualified practitioner, whose special duty it shall be to take the medical charge of the developed cases. As a general rule this should be the Union medical officer, who has to treat epidemics in ordinary seasons, and on whom therefore naturally devolves the medical treatment of the extraordinary epidemic. During the emergency, in large and populous places at least, the Union medical officer should be kept as strictly as possible to the performance of his usual duty, which is that of the care of the sick. For this reason he should have nothing to do personally with carrying into effect the visitation system, but should devote himself to the charge of the cases which the visitation discovers and sends to him. It is true that he may require assistance; and one of the first objects of the preliminary meeting should be to consider the amount of such assistance which must be given, and how it may be best supplied. The General Board would not of course venture to give Boards of Guardians any specific advice as to the *extra* remuneration which it would be right to allow the Union medical officer while performing this additional onerous duty. It may be well, however, to say that when medical men other than the parochial

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\* The remuneration hitherto given to medical men of the qualifications required, has been 3*l.* 3*s.* per diem, travelling expenses, and 15*s.* per night for hotel expenses. It may be observed that travelling and personal expenses will of course be saved by engaging the services of a resident medical man.



medical officers have been so employed, it has been usual to give them 31s. 6d. per day. If they should be brought from a distance, travelling expenses to and fro have been also allowed. In cases of pressing emergency, the General Board will promptly attend to any application which may be made to them for the services of qualified practitioners on the above terms.

### 3. *House-to-house Visitors.*

These gentlemen are usually selected from amongst junior medical practitioners, or the more advanced students in medical schools.

If there should be any medical schools, hospitals, or infirmaries in the neighbourhood of the outbreak, the requisite number of visitors will in all probability be obtained without difficulty from them. If, however, this should not be practicable, an application, by telegraph, to the General Board, stating the number required and the proposed scale of remuneration, will be immediately attended to. Visitors have usually been paid from 4l. 4s. and 5l. 5s. per week to 1l. 1s. per day. If brought from a distance they ought to be paid their travelling expenses to and fro.

### *Duties of Board of Guardians on the first intimation of the Approach of Epidemic Cholera.*

As soon as the Board of Guardians have been warned, either that cases of cholera have occurred, that cholera has broken out as an epidemic in any part of their district, or that the unusual prevalence of diarrhœa renders such an outbreak *imminent*, the medical superintendent should be summoned to his post and should immediately obey the summons.

### *Preliminary Meeting of Medical Men.*

On his arrival, the first step of the medical superintendent should be to call a meeting of the district medical officers and the medical practitioners of the neighbourhood. He should then explain that the object of the proposed arrangements is to furnish the poorer classes, who are likely to be the greatest sufferers from the epidemic, with such medical aid as private practitioners may be unable to supply; and that this object would, to a great extent, be frustrated if those arrangements were allowed in any way to interfere with the practice of private practitioners. It is most essential to insist on this point, and it would be well to engage that any interference with private practice on the part of any officer employed, would be followed by immediate dismissal.

The medical superintendent and medical officers should then consider and settle their combined plan of operations; the medical districts which should be included within these operations; the number of house-to-house visitors required for the special districts likely to be attacked, and for the several services; the propriety of establishing temporary hospitals for the reception and treatment

of the sick; the best sites for such hospitals, for houses of refuge, and for dispensaries; the medicines with which sufferers from diarrhoea should be supplied in the intervals which may elapse before the arrival of medical aid; the notices and placards which it would be desirable to circulate for the information of the people; the forms in which the statistical returns of the daily progress of the disease should be made and the times at which the medical superintendent, district officers, and visitors should meet.

A few suggestions on each of these points may be of use.

#### *Districts.*

The term "districts" is here used to denote the areas assigned to a given number of medical officers. The existing division of the parish or union into districts for ordinary medical relief should, as far as possible, be retained; and the districts and sub-districts included in the plan of operations should be such of the existing medical districts as may be either affected or threatened with cholera.

#### *House-to-house Visitors.*

The number of house-to-house visitors required in the various districts will, of course, depend on the number and extent of the epidemic localities, and on the extent to which the disease may actually prevail. The district medical officers and the resident medical practitioners ought to prepare themselves before coming to the meeting with the means of advising on this point.

#### *Hospitals.*

It will be right to provide some hospital accommodation not only for those who may be taken ill in the streets, or at a distance from home, but also for those who live in unhealthy places or crowded rooms. The hospitals should be well ventilated and well drained, and should be near the epidemic locality. Care should be taken to avoid any sites that may be near accumulations of refuse or marsh land or the banks of foul streams. Whenever there is a general hospital in the town, conveniently accessible, arrangements should, if possible, be made with the authorities for the reception of necessitous cases.

In the present state of uncertainty as to the mode of propagation of cholera, it is recommended that in hospitals and other places where cholera patients are under treatment, all foul linen, as soon as it is removed from the patients or from their beds, should be immersed in boiling water, or in water to which a disinfecting fluid has been added.

The vessels used for the reception of the discharges from cholera patients should be removed and cleansed without delay; and great personal cleanliness on the part of all nurses and attendants should be strictly enjoined.



The patients should generally be removed to the hospital in the horizontal posture. Each union house should therefore be provided with one or more litters, or other appropriate conveyance, for this purpose. And as the removal of patients in the extreme stages of the disease is attended with danger, this should always be done under medical advice.

#### *Houses of Refuge.*

Experience has abundantly proved that when cholera has broken out in a foul and noisome locality, or in an overcrowded, ill-ventilated, and dirty house, the best means of preventing the spread of the disease, and the consequent loss of life, is to remove the inhabitants until the necessary cleansing and other remedial measures have been executed. For this purpose some temporary places of accommodation should be provided for the people.

These places may be either hired houses, or other spacious buildings, warehouses properly fitted up, or temporary erections, as large sheds, made for the purpose. Sometimes tents, or school-rooms, unoccupied chapels, &c., have been used with advantage, and sometimes vacant rooms in the workhouse. In all cases the advantage of removing persons at once from the immediate influence of the causes of infection has been so conspicuous as to render the provision of houses of refuge one of the most important means of counteracting the spread of cholera. Great care should also be taken to select only such sites for houses of refuge as are dry, elevated, capable of free ventilation, and, if possible, isolated from other habitations. These places should always be in readiness in case a sudden outbreak of the disease should occur.

#### *Dispensaries.*

In every affected district dispensaries and depôts for medicine should be established, where, at any hour of the day and night, the poor may be able to obtain, gratuitously, medical advice and a supply of appropriate medicines.

The dispensaries should be the surgeries of the Poor Law medical officers, and, if deemed necessary, special depôts should be temporarily appointed.

In many instances the chemists' shops will be found to be the most convenient places.

In rural districts, depôts of ready prepared medicines should be established at the houses of one or more of the most intelligent and influential residents.

#### *Notices and Placards.*

These will be required for the purpose of thoroughly informing the people what they should do, and what has been provided for them. A form of notice embodying the various points to which the attention of the people should be strongly drawn is appended. (See Appendix 1.)

*Returns.*

In order to enable the local authorities to ascertain the state and progress of the epidemic from day to day, it is particularly desirable that returns of the cases discovered and treated, as well as of the deaths, should be daily made. These returns will also be of great national importance, as tending to improve our acquaintance with the disease, and to suggest the most efficacious means of dealing with it on a large scale. The proposed returns will come under three heads—"Visitor's Returns," "District Medical Officer's Returns," and "Returns by Medical Superintendent."

Forms for each of these returns are given in Appendix 2, together with short instructions for filling them up.

The main objects of these returns are to ascertain the exact daily progress of the epidemic among the poorer classes in every district; to determine clearly the proportion which exists between cases of diarrhœa and cholera; and the precise effect of treatment.

The returns of deaths throughout the union from cholera or diarrhœa ought if required to be furnished daily to the medical superintendent by the local registrars. The returns should be made up invariably from midnight to midnight.

*Special Duties of the Medical Superintendent.*

He should, immediately on entering on his duties, call a meeting of the *district medical officers*, which all the resident medical practitioners should also be invited to attend; and he should then briefly state the measures which he has to propose, and describe the duties which he and they have severally to perform.

He should then place in the hands of the medical officers, and the other resident medical practitioners, the forms of medical returns, and invite their attention to the president's letter, embodying the recommendations of the Medical Council.

He should make such arrangements as are necessary to ensure concerted action; and to enable him to trace the progress of the epidemic, request all the medical men, as well as the district medical officers, to enter the number of *new cases* that they see day by day in the short returns, which should be collected at a stated hour daily.

He may request them to enter in the same forms on every Saturday the number of cases belonging to the several heads, then under their care.

He should organize, regulate, and take the entire conduct of the visitation system immediately after the preliminary meeting already described. As the first step in the fulfilment of this duty, he should communicate to the clerk of the Board of Guardians the probable number of qualified medical assistants and of medical students that will be necessary to form the visiting staff



and should take the necessary means to engage this number, and to ensure their being in readiness to obey his summons the moment he issues it.\* He should also inform the clerk of the guardians of the nature and extent of the accommodation needed for the temporary hospitals and houses of refuge; the districts which will be placed under inspection; and the dispensaries or depôts of medicine which it may be proposed to open.

His next step should be to divide the locality under his charge into districts and sub-districts for visitation purposes. As the daily visitation will be carried on chiefly in the localities which are the usual haunts of epidemic disease, and the dwelling-places of the poorer classes, care should be taken that the limits of each sub-district should be considered with reference to this basis of action. As a general rule each sub-district should embrace only so many houses as one visitor can manage effectively to visit every day.†

The next care of the medical superintendent should be to provide houses of refuge and dispensaries, and, if necessary, temporary hospitals, and to place them respectively in the best state practicable, as regards their sanitary arrangements and general efficiency.

In places where there are factories he should write to the Secretary of State for the Home Department, requesting him to authorize the factory inspectors to direct their certifying surgeons to visit such factories daily, for the purpose of inquiring as to the existence of diarrhœa amongst the workpeople, and promptly administering the proper medicines.

He should also address a circular to the proprietors or managers of every establishment where large numbers of work-people or children may be daily congregated together, inviting them to co-operate with the medical officer, and suggesting the means by which such co-operation may be made most effectual. A form for the proposed circular is annexed. (Appendix 3.)

After settling with his colleagues the remedies which in cases of emergency may be administered before the arrival of a qualified practitioner, the medical superintendent should take care that directions for the use of each form of medicine be printed in plain type, and that instructions be given to all persons charged with the distribution of the medicines, whether at the dispensaries or elsewhere, to attach the appropriate directions in the form of a label to such medicines.

The directions should never omit to state briefly the dose for adults, for young persons, and for children.

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\* If the clerk has not previously received from the guardians the requisite authority to make such arrangements as the medical officer may think necessary, he should at once apply for such authority, and lose no time in acting upon it when obtained.

† The number of such houses will of course vary with circumstances; but in thickly-peopled localities, where the several stories and apartments of each house are generally inhabited as distinct tenements by different families, it has been found that one visitor may visit every day 200 separate families.

The medical superintendent will receive the reports of the inspector of nuisances, and should urge the strict observance, as far as possible, of the regulations issued by the General Board, under the Nuisances Removal and Diseases Prevention Act, more especially as to the removal of nuisances, the cleansing and whitewashing of filthy tenements, the ventilation of unwholesome rooms, the prevention of over-crowding, and the enforcement of the Common Lodging-houses Act.

He should every day send to the General Board the return (duly filled up) of which a form is given (Appendix 2, E.), accompanied by such remarks as he may deem calculated to display any interesting points connected with the progress of the disease. Any important information which he may obtain relative to outbreaks in neighbouring localities, though not in his district, should be promptly forwarded by him to the General Board. It is of the utmost importance that these returns be made regularly day by day.

He should every day, or as often as necessary, meet the medical officers, assistants, and visitors, at an appointed hour; receive their several reports, and settle (with their advice) any practical questions of administrative detail which may have been raised by the proceedings of the day; and also confer with them as to the expediency of increasing, diminishing, or re-distributing the staff of medical assistants and visitors.

When the epidemic is over, he should prepare for transmission to the General Board a succinct report on the whole history and progress of the epidemic, from its first commencement to its termination, with statistical tables and a map, marking the infected localities. The points to which the report should be chiefly devoted are suggested in the list of queries set forth in Appendix 4, and in the statistical tables.

In drawing up his report the medical superintendent should avail himself of the reports and returns of the medical officers and inspectors of nuisances.

#### *Duties of Medical Officer.*

The first duty of the medical officer is to give instant attention to the treatment of the sick. He should therefore immediately visit all cases of cholera reported to him by the visitors, or which may otherwise come to his knowledge as being destitute of medical aid. He should also give prompt attention to every case of diarrhoea which the visitors may report as requiring his assistance.

He should further execute, with all practicable efficiency, the various duties assigned to the district medical officers in the directions and regulations issued by the General Board, under the Nuisances Removal and Diseases Prevention Act, especially those which relate to overcrowded dwellings and the removal of nuisances.

He should supervise such cleansing operations as might be attended with risk if negligently performed.



His surgery should be open all day as a dispensary (see below as to duties of persons in charge of dispensaries). If his house should be one of those deemed convenient for the purpose, he should have his surgery open as a dispensary all night, for the use of one of the legally qualified medical men who might be appointed to assist him.

He should see that a supply of blankets, and other articles required by the sick, is kept at a convenient place in each district; but no such articles are to be given out except upon his written order or that of the medical superintendent, countersigned by some person authorized in that behalf by the Board of Guardians.

He should endeavour to organize a staff of nurses for the care of such poor and destitute persons as most urgently require constant attendance.\*

He should, in proper cases, furnish persons with tickets of admission into houses of refuge, and no persons should be admitted into such houses without a ticket signed by him or one of his qualified assistants.

He should give such directions as may appear to him to be needful, with respect to the care, removal, and the time of interment of the bodies of persons dying of cholera.

He should, unless where other arrangements have been made, furnish the house-to-house visitors with a supply of medicines for distribution on the spot to all persons suffering from diarrhoea, and with a sufficient number of printed labels of directions adapted to each kind of medicine. He should meet daily the medical superintendent and the medical assistants, punctually at the hour appointed for the meeting. He should daily have in readiness by that hour the return for the previous day. He should, to the best of his ability, record the cases treated by him in Forms A. and B., Appendix 2, and furnish full replies, when required to do so, to the queries contained in Appendix 4. He should also be in daily communication with the house-to-house visitors of his district, and examine their returns.

#### *Duties of House-to-House Visitors.*

The house-to-house visitor will be directed in his operations, in all respects, by the medical superintendent.

He will take notes of the cases discovered by him according to the schedule entitled "Visitor's Return" (Appendix 2, C.), will make a daily return to the medical superintendent.

He will visit every house in the sub-district assigned to him, once each day, *at the least*, commencing his visitation at as early an hour in the morning as circumstances will permit. In cases of sudden outbreaks of the epidemic in confined localities, it may be necessary that the visitation should be made more frequently.

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\* The provision of blankets, &c., and of a staff of nurses, will, of course, be made after communication with the clerk of the Board of Guardians and the medical superintendent.

He will hold himself in readiness to take charge immediately of any new district that may be assigned to him by the medical superintendent, whether within or without the district in which he may have previously served.

He will use his best endeavours to discover the existence of cholera and diarrhœa in the district assigned to him. He should by his manner and behaviour endeavour to gain the confidence of the people among whom he visits. He should be provided with medicines to dispense to all persons found to be suffering from diarrhœa, or from other symptoms approaching cholera.

Whenever he finds a case of diarrhœa which resists simple treatment, or which is attended with any other symptoms of approaching cholera, he will immediately report it as a case of urgency to the medical officer.

Whenever he finds a case of cholera or collapse, he will instantly despatch a messenger to the medical officer informing him of the fact.

He will not interfere in the subsequent management of such cases, except under the direction of the medical officer, and he will be most careful not to interfere with cases already under medical treatment, unless in *emergency*.

He should in a kind manner converse with the people, and endeavour to allay alarm; he will give advice as to the importance of cleanliness of person and dwelling; of ventilation, more especially of sleeping-rooms; of temperance, and proper diet.

He should strongly impress on the people the great danger of neglecting looseness of the bowels, or *diarrhœa*, and the necessity of immediate application, on the first appearance of these symptoms to the dispensaries or depôts; and in urgent cases, to the medical officer in charge of the district, at any hour of the day or night.

He should caution the people not to move about while diarrhœa is upon them, but to remain quiet, and, if possible, in bed.

He will state in his return to the medical superintendent, or to the parties in charge of the disinfectants, blankets, &c., the names of such necessitous persons as he may think should be supplied with such articles.

He will warn persons living in unwholesome dwellings, and in infected districts, of the urgency of cleansing operations, and of temporary removal from such localities, and he will endeavour to induce parties to act upon his advice.

He will report to the superintendent, or to the proper authority, all nuisances which he may discover during his visits; and any houses, rooms, or localities which may stand in urgent need of cleansing and purification.

He will meet the superintendent every day at the time appointed.



*Duties of Persons in charge of Dispensaries and Depôts for Medicines.*

The medical officer will, of course, superintend the arrangements for the dispensing of medicines at his own surgery.

The persons charged with the management of temporary depôts should always, when practicable, be qualified medical practitioners. They will be subject to the direction of the medical superintendent.

At each of the dispensaries, both those which are opened by day, and those which are opened by night, some *qualified* assistant should be always on the spot ready to give medical advice and medicines to all applicants.

The medicines prescribed for administration as remedies should be kept ready made up, and, as has been already pointed out, should never be given to an applicant without an appropriate printed label of directions.

Dispensers must accurately fill up returns and transmit them to the medical superintendent. These returns must also be filled up by the person in charge of the dispensary, even when he happens to be the medical officer.

In the foregoing minute the Board have not insisted in detail on the importance of the most rigid enforcement of the directions issued by the Board under the Nuisances Removal and Diseases Prevention Act, partly because they presume that Boards of Guardians are already fully alive to the duties imposed on them by Parliament in relation to those directions, and partly because they are unwilling to complicate with any collateral details the exposition of the process by which the system of house-to-house visitation may be most effectually worked.

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APPENDIX 1.

(TO INSTRUCTIONS TO LOCAL AUTHORITIES, &c.)

*Form of Notice to Inhabitants of Arrangements adopted to meet Epidemic Cholera.*

NOTICE.

The Board of Guardians hereby inform the inhabitants that the following arrangements have been made by the authorities for the relief of the poor, and for the preservation of the public health during the persistence of Epidemic Cholera :—

MEDICAL ADVICE AND ASSISTANCE.

The town has been divided into districts, which are the same as the parochial medical officers' districts. Applications for medical advice,

attendance, and medicines (which may be had *without charge*) for cases of cholera may be made in—

|                        |                         |
|------------------------|-------------------------|
| <i>District</i> No. 1, | <i>District</i> —to Dr. |
| ” ” <i>or</i>          | ” Dr.                   |
| <i>District</i> No. 2, | <i>District</i> —to Dr. |
| ” ” <i>or</i>          | ” Dr.                   |
| <i>District</i> No. 3, | <i>District</i> —to Dr. |
| ” ” <i>or</i>          | ” Dr.                   |

*All of whom are empowered and required to afford assistance with the least delay possible.*

#### DISPENSARIES AND DEPÔTS FOR THE SUPPLY OF MEDICINES.

It has been found that cholera is preceded by looseness of the bowels for some time, sometimes days, sometimes only hours, before the severer symptoms of cholera set in; such as sickness, vomiting, cramps, or severe purging. This diarrhœa is easily curable, but if it be neglected it may rapidly run on into cholera, when its course can scarcely be controlled, and death too often ensues.

Persons suffering from looseness of the bowels should apply, even although there be no pain of the bowels, at any of the following places, where medicines, with printed instructions, may be obtained. Persons affected in the night are urgently warned not to wait till morning, but to apply at once for medicines (or attendance, as above directed, if necessary) at

THE DURING THE NIGHT,  
where the medical officers will be in attendance.

In addition to the above, medicines will be supplied *gratuitously*  
DURING THE DAY by—

#### HOUSE-TO-HOUSE VISITORS.

Qualified persons will be appointed by the authorities to visit the infected localities, and to distribute medicines to those among the people who are affected with cholera, or looseness of the bowels.

Persons affected with looseness of the bowels are not, however, if they become worse during the period intervening between the visits of the house-to-house visitor, to wait till his return, but to apply to the local dispensary or depôt at once.

#### NURSES.

The district medical officers and assistant officers are empowered to employ certain nurses for the care of those *poor and destitute persons* who more urgently require such aid. Persons willing to become nurses will send in their names to the undersigned.

#### HOSPITAL ACCOMMODATION.

Cases of cholera occurring among the poor and destitute will be received into the on the order of the medical officers of the and of the above district medical officers; but the public is earnestly cautioned against sending cases of *complete collapse* to the without medical authority, because the patient may die in consequence of the removal.



## HOUSE OF RECEPTION.

A house of reception has been provided at \_\_\_\_\_ for the reception of the families of those persons suffering under cholera whose houses are in such a state as to endanger the lives of the occupants, or where temporary cleansing works are necessary for safety. All persons are urgently warned that the only effectual measure of safety for those who inhabit unwholesome dwellings and infected districts is removal from the locality.

## HOUSES UNWHOLESOME AND UNFIT FOR HUMAN HABITATION.

Inspections are being made, and the owners of all such houses or parts of houses will be proceeded against where the law admits. To avoid proceedings, owners of such houses should at once endeavour to place them in a wholesome condition.

## LODGING HOUSES.

All persons keeping lodging houses are required to register the same forthwith, in accordance with the law. Persons keeping lodgers without being registered and properly licensed, incur a penalty of £5.

## INSPECTION OF NUISANCES.

Inspections of nuisances are being carried on. All complaints should be delivered in writing at the \_\_\_\_\_, addressed to Mr. \_\_\_\_\_ when the most prompt attention will be paid, and the necessary steps taken for their removal, where practicable.

By order of the Board,

\_\_\_\_\_, Clerk of the Board of Guardians, or  
Inspector of Poor.

## PRECAUTIONS AGAINST CHOLERA.

1. Apply for medicine immediately to stop looseness of the bowels, or it may bring on cholera.
2. Do not take any strong opening medicine without medical advice.
3. Beware of drink, for excess in beer, wine, or spirits is likely to be followed by cholera.
4. Drink no water which has not been boiled; and avoid that which is not quite clear and well tasted.
5. Avoid eating meat that is tainted, decayed or unripe fruit, and stale fish or raw vegetables. Cooked vegetables, or ripe and cooked fruit, in moderation, are a necessary part of diet at all times.
6. Avoid fasting too long; be moderate at meals.
7. Avoid great fatigue, and getting heated and then chilled.
8. Avoid getting wet, or remaining in wet clothes.
9. Keep yourself clean, and your body and feet as dry and as warm as your means and occupation will permit.
10. Keep your rooms well cleaned and lime-washed; remove all dirt and impurities immediately.
11. Keep your windows open as much as possible to admit fresh air; and, if necessary, use chloride of lime or zinc to remove any offensive smells.
12. If there are any dust or dirt heaps, foul drains, bad smells, or other nuisances in the house or neighbourhood, make complaint without delay to the local authorities having legal power to remove them, or if there be no such authorities, or if you do not know who they are, complain to the Board of Guardians.

## APPENDIX 2.

(TO INSTRUCTIONS TO LOCAL AUTHORITIES, &amp;c.)

*Medical Forms of Return.*

THIS Letter was sent with the two following Forms (A. & B.) to the Medical Practitioners of the Metropolis.

General Board of Health, Whitehall,  
September 1854.

SIR,—My experience of this department, brief as it is, has strongly impressed me with a sense of the great want that is now felt of some systematic record of cases of Choleraic disease, their treatment and results, with a view to determine, in so far as may be possible, the best mode of meeting this formidable Epidemic.

Hitherto no successful attempt has been made to collect such a record; and as I find that my feeling of the want of it is very generally shared by the medical profession, I have obtained the sanction of Her Majesty's Government to the nomination of a Medical Council, representing all branches of the profession, and consisting of Dr. Paris, Sir James Clark, Dr. Alderson, Dr. Babington, Dr. Tweedie, Dr. Baly, Mr. Lawrence, Mr. Simon, Professor Owen, Mr. N. B. Ward, Mr. John Bacot, and Dr. Farr.

Under the sanction of this Council, the following form of return has been prepared for transmission to all qualified practitioners in the metropolis, to be filled up by them, with a view to obtain their experience of the present Epidemic.

The deaths from Cholera, as well as from all other causes, are registered in England; but it is evidently desirable that in this as in other countries the cases of recovery, as well as of death, should be systematically observed and recorded. But this can only be accomplished by the cordial co-operation of all the medical men in practice, which the Board hopes, in this important matter, to obtain, by acting on the advice of a Council in which all branches of the medical profession are represented.

By means of a return, in the accompanying forms, the observations of all qualified practitioners on the cases that come under their care may be collected, and made available for determining the laws which regulate Choleraic disease, and the effects of the different systems of treatment now in use.

Any return that you may make will be considered strictly confidential, but your name will be recorded as a contributor to the observations, when the general results are made known.

Under the urgent pressure of practice, to keep any accurate record of the cases will often be attended with difficulty; but this difficulty will, I feel assured, be cheerfully encountered by you, if you agree with me in thinking a record of the experience of the present generation of medical men as to this epidemic likely to contribute to the alleviation of the sufferings of mankind for the future.

The return on the other side is sent filled up, as a specimen, with blank forms. Any number of such forms you may require will be furnished by this office.

It is recommended that the forms should be filled up from day to day, and returned to the Board, on or before the 15th November next, addressed to the Secretary of the General Board of Health, and the postage of the letter enclosing the return need not be prepaid.

I have the honour to remain, Sir,

Your obedient servant,

B. HALL.



## RETURNS OF CHOLERAIC DISEASE.

## FORM A. DIARRHŒA.

*Sheet of Instructions and Examples for the Record of Cases of Diarrhœa.*

(Attention is particularly requested to the following instructions, as the value of the returns will depend on their uniformity.)

INSTRUCTION I.—The following *degrees or stages of the disease* should, when possible, be distinguished.

- |                  |   |   |
|------------------|---|---|
| <i>Diarrhœa.</i> | { | <p>1. <i>Simple</i>.—Alvine discharges liquid, but fœcal. Vomiting and cramps absent.</p> <p>2. <i>Choleraic</i>.—Alvine discharges very copious, watery, still tinged with bile. Vomiting generally present, but not continued or urgent. Cramps absent.</p> |
|------------------|---|---|

ALL CASES OF "DIARRHŒA" ARE TO BE ENTERED ON THE SHEET A. AS SOON AS THEY ARE SEEN.

SO SOON AS THE "CHOLERAIC DIARRHŒA" PASSES INTO "CHOLERA," THE FACT SHOULD BE RECORDED IN THE PROPER COLUMN OF THIS RETURN (A.), AND THE PEN SHOULD BE DRAWN THROUGH THE CASE, ALL THE PARTICULARS OF WHICH SHOULD THEN BE TRANSFERRED TO THE "RETURN B.," AND ITS SUBSEQUENT COURSE BE THERE RECORDED.

INSTRUCTION II. *Absence of Stages*.—The commencement of "Choleraic Diarrhœa" is generally marked by vomiting; and when vomiting exists from the very beginning, the word "*absent*" or "*abs.*" may be written opposite "Simple Diarrhœa" in the Return.

INSTRUCTION III. *Dates*.—When the time of commencement of either stage cannot be ascertained, the words "*not known*" or "*n. k.*" should be written in the place of date; but the time of commencement may generally be stated approximately. (See Instruction III. Return B.)

INSTRUCTION IV. *Treatment*.—The nature of the treatment should be indicated in the Return as concisely as possible. When any uniform and definite plan of treatment is adopted in a series of cases, that plan should be accurately described in the space for "REMARKS," and should be indicated in the Table by one or two words, as "*Conf. Arom. c. Op.*," "*Sulph. Ac.*," &c.

## GENERAL RETURN OF THE NUMBER OF CASES

|  | Total Number of Cases. | Cases of Simple Diarrhoea not passing into further Stages. |
|--|------------------------|--|
|  | 204                    | 181  |

## ALL CASES OF DIARRHŒA, with Particulars

| No. of Case. | Residence when attacked (Street and Number of House). | Sex. |    | Age last Birth-day. | Rank and Occupation. (If Master, write Mast. after the Name of Occupation.) | Degrees or Stages of the Disease.         |
|--------------|---|------|----|---------------------|---|---|
|              |   | M.   | F. |                     |   |   |
|              | 1, George Street, Rotherhithe.                        |      | F. | 13                  | Daughter of Bargeman.   | Simple Diarrhoea -<br>Choleraic Diarrh. - |
| 2            | 44, Thomas Street, Lambeth.                           | M.   |    | 2                   | Son of Labourer.  | S. Diarrh. - -<br>Ch. Diarrh. - -         |
| 3            | 12, William Street, Golden Square.                    | M.   |    | 45                  | Baker (Mast.)   | S. Diarrh. - -<br>Ch. Diarrh. - -         |
|              |   |      |    |                     |   | S. Diarrh. - -<br>Ch. Diarrh. - -         |
|              |   |      |    |                     |   | S. Diarrh. - -<br>Ch. Diarrh. - -         |
|              |   |      |    |                     |   | S. Diarrh. - -<br>Ch. Diarrh. - -         |
|              |   |      |    |                     |   | S. Diarrh. - -<br>Ch. Diarrh. - -         |

## REMARKS.

NOTE.—Blank Forms A. & B., which may be procured from the General the private practitioners of places in which diarrhoea and cholera are





## RETURNS OF CHOLERA DISEASE. FORM B. CHOLERA.

*Sheet of Instructions and Examples for the Record of Cases of Cholera.*

(Attention is particularly requested to the following instructions, as the value of the Returns will depend on their uniformity.)

INSTRUCTION I.—*The following Degrees or Stages of the Disease* are generally recognized by the Medical Profession, and wherever it is possible should be distinguished. The terms adopted to designate them are in common use. All the stages are not present in every case.

- |                  |   |
|------------------|---|
| <i>Diarrhœa.</i> | 1. <i>Simple.</i> — Alvine discharges frequent and liquid, but fecal. Vomiting and cramps absent.   |
|                  | 2. <i>Choleraic.</i> — Alvine discharges very copious, watery, still tinged with bile. Vomiting generally present, but not continued or urgent. Cramps of extremities absent.   |
|                  | 3. <i>Without Collapse.</i> — Alvine discharges watery, colourless, with white flakes (rice-water). Vomiting commonly urgent. Cramps of extremities frequent and severe. Eyes somewhat sunken. Temperature of surface lowered. Pulse small and feeble. Urine not secreted.  |
| <i>Cholera.</i>  | 4. <i>With Collapse.</i> — Surface of face and extremities quite cold, often wet. Face and hands much shrunk, and more or less deeply livid. Cramps present. Pulse at wrist absent or scarcely to be felt. Veins of extremities contracted to dark threads. Urine not secreted. Voice usually much altered and feeble.    |
|                  | 5. <i>Consecutive Fever.</i> — Temperature of surface more or less restored. Pulse distinct, sometimes full and throbbing. Veins more or less filled. Face less shrunk, or even full and deeply flushed. Drowsiness passing into stupor. Alvine discharges again containing bile. Urine, in most cases, still suppressed. |

INSTRUCTION II. *Absence of Stages.*—The absence of any one or more of the earlier stages should be indicated by the word “*absent*” or “*abs.*” written opposite the deficient stage in the place of the date of commencement. The fact of the disease not reaching the later stages will be sufficiently shown by the mode of termination of the case, (“*death,*” or “*recovery,*”) being written opposite the stage at which the disease ceased.



INSTRUCTION III. *Dates*.—When the time of commencement of a particular stage cannot be ascertained, the words "*not known*" or "*n. k.*" should be written in the place of the date. But although the precise hour of the commencement of each stage cannot be determined exactly, except in rare instances, it may generally be stated approximately by taking some intermediate time between a known period when the symptoms of the particular stage were entirely absent, and one in which they were clearly developed.

INSTRUCTION IV. *Recovery*.—The date of recovery should be fixed at the time when all the symptoms of the disease, and all marked disturbances of health directly resulting from it, have disappeared, although some degree of debility may remain.

INSTRUCTION V. *Treatment*.—The nature of the treatment should be indicated in the Table as concisely as possible. When any uniform and definite plan of treatment is adopted in a series of cases, that plan should be accurately described in the space for "*REMARKS*," and should be indicated on the Table by one or two words, as "*Salines*," "*Calomel c. Op.*," "*Stimulants*," "*Sulph. &c.*," &c.

INSTRUCTION VI.—If any patient at the time of the attack was already suffering from another disease, the nature of that disease and the treatment used for it should be mentioned in the "*REMARKS*."

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## FORM B.

## GENERAL RETURN OF NUMBER

| Total Number of Cases. | Cases of Cholera not passing into complete Collapse. |
|------------------------|--|
| 23                     | 15   |

## All CASES OF CHOLERA, with Particulars of the Duration

| No. of Case. | Residence when attacked (Street and Number of House.) | Sex. |    | Age (last Birth-day.) | Rank and Occupation. (If Master, write Mast. after the Name of Occupation.) | Degree or Stages of the Disease.* |
|--------------|---|------|----|-----------------------|---|-----------------------------------|
|              |   | M.   | F. |                       |   |                                   |
| 1.           | 7, John Street, Bedford Square.                       |      | F. | 30                    | Lodging House Keeper.   | Simple Diarrhœa -                 |
|              |   |      |    |                       |   | Choleraic Diarrh.                 |
|              |   |      |    |                       |   | Cholera (without collapse) - -    |
|              |   |      |    |                       |   | Collapse - -                      |
|              |   |      |    |                       |   | Consecutive Fever -               |
| 2.           | 12, William Street, Golden Square.                    | M.   |    | 45                    | Baker. (Mast.)  | S. Diarrh. - -                    |
|              |   |      |    |                       |   | Ch. Diarrh. - -                   |
|              |   |      |    |                       |   | Cholera - - -                     |
|              |   |      |    |                       |   | Coll. - - -                       |
|              |   |      |    |                       |   | Consec. F. - -                    |
| 3.           | 20, Frederick Street, Hoxton.                         | M.   |    | 15                    | Son of Bricklayer.  | S. Diarrh. - -                    |
|              |   |      |    |                       |   | Ch. Diarrh. - -                   |
|              |   |      |    |                       |   | Cholera - - -                     |
|              |   |      |    |                       |   | Coll. - - -                       |
|              |   |      |    |                       |   | Consec. F. - -                    |
| 4.           | 13, Mary Street, Poplar.                              |      | F. | 63                    | Wife of Master Shoemaker.   | S. Diarrh. - -                    |
|              |   |      |    |                       |   | Ch. Diarrh. - -                   |
|              |   |      |    |                       |   | Cholera - - -                     |
|              |   |      |    |                       |   | Coll. - - -                       |
|              |   |      |    |                       |   | Consec. F. - -                    |

## REMARKS.

NOTE.—Blank Forms A. and B., which may be procured from the General the private practitioners of the places in which diarrhœa and cholera are



## FORM B.

## OF CASES OF CHOLERA OBSERVED.

| Cases of complete Collapse. | Number of foregoing Cases in which<br>Consecutive Fever supervened. |
|-----------------------------|---|
| 18                          | 8   |

and Treatment of the several Stages in each Case.

| Dates of their<br>commencement. |         | Termination of<br>the Case. |                | Dates of Death<br>or Recovery. |        | Treatment in the several Stages.<br>(For the mode of filling up this<br>Column, see Instruction No. V.) |
|---------------------------------|---------|-----------------------------|----------------|--------------------------------|--------|---|
| Day.                            | Hour.   | Death.                      | Reco-<br>very. | Day.                           | Hour.  |   |
| Aug. 18                         |         |                             |                |                                |        |   |
| „ 5                             | 1 p.m.  |                             |                |                                |        |   |
| „ 5                             | 8 p.m.  |                             |                |                                |        |   |
| „ 5                             | 12 p.m. | Death.                      |                | Aug. 6.                        | 2 p.m. |   |
|                                 |         |                             |                |                                |        |   |
| Aug. 9                          | 1 a.m.  |                             |                |                                |        |   |
| „ 10                            | 6 a.m.  |                             |                |                                |        |   |
| „ 10                            | 7 p.m.  |                             |                |                                |        |   |
| „ 10                            | 11 p.m. |                             |                |                                |        |   |
| „ 12                            | 8 a.m.  |                             | Reco-<br>very. | Aug. 14                        |        |   |
| Not known.                      |         |                             |                |                                |        |   |
| Aug. 17                         | 11 p.m. |                             |                |                                |        |   |
| „ 18                            | 7 a.m.  |                             |                |                                |        |   |
| „ 18                            | 6 p.m.  |                             | Reco-<br>very. | Aug. 20                        |        |   |
|                                 |         |                             |                |                                |        |   |
| Absent.                         |         |                             |                |                                |        |   |
| Aug. 18                         | Noon.   |                             |                |                                |        |   |
| „ 18                            | 4 p.m.  |                             |                |                                |        |   |
| „                               | 11 p.m. |                             |                |                                |        |   |
| „ 20                            | 4 p.m.  | Death.                      |                | Aug. 25                        |        |   |

## REMARKS.

Board of Health, should be placed in the hands of the medical officers, and of epidemic.

Form C.

House-to-House Visitor's Daily Return, with Examples as to mode of filling up the same.

Date

Day of

1854.

Streets or Places within  
Visitor's District - - }

Registration District,  
Do. Sub-District,

} Within which the above Streets  
or Places are situated.

| Street visited. |                 | Numbers<br>of Persons<br>in Houses<br>visited. | Names of Persons<br>visited.                                 | Sex and Age.      |                     | Occupation<br>(distinguishing Masters).  | Nature of<br>Illness.  | No. of<br>Visit.                         | Advice and<br>Prescription.   |
|-----------------|-----------------|--|--|-------------------|---------------------|--|--|--|---|
| No. of          | Name of Street. |  |  | M.                | F.                  |  |  |  |   |
| 1               | Silver Street - | 9  | John Jones -<br>Jane Jones -<br>Anne Evans -<br>Jane Evans - | 31<br>-<br>-<br>- | -<br>28<br>18<br>15 | Bricklayer (Master)<br>Bricklayers' Wifo -<br>Bricklayers' Daughter -<br>Do. Do. - | S. Diarrhoea -<br>Cholera -<br>Collapse -<br>Cholera.—Dead - | First -<br>First -<br>First -<br>First - | Mixture No. 1.<br>See Medical Officer.<br>Do.<br>Refer to Med. Off. |
| 2 to            | Do. -           | -  | No Persons ill.  |                   |                     |  |  |  |   |
| 9               | Do. -           | 7  | Thomas Roberts -<br>Jane Roberts -                           | 56<br>-           | -<br>12             | Tailor -<br>Tailor's Daughter -  | Choleraic Diarrhoea -<br>S. Diarrhoea -                      | Second<br>First -                        | See Medical Officer.<br>Powder No. 1.                               |



## SUMMARY OF VISITOR'S RETURN.

1. Number of Houses visited by him during the Day - - -
2. Number of Houses in which Cases of Diarrhoea or Cholera were found - - -
3. Number of Persons resident in Houses of No. 2. - - -
4. Cases visited; viz. - - -

|                                  | Cases visited. |                   |        | How treated.    |                              |                                     |
|----------------------------------|----------------|-------------------|--------|-----------------|------------------------------|-------------------------------------|
|                                  | First Time.    | Second, &c. Time. | Total. | Prescribed for. | Referred to Medical Officer. | Referred to Dispensary or Hospital. |
| S. Diarrhoea - - -               | 27             | 16                | 43     | 42              | 1                            | -                                   |
| Choleraic Diarrhoea - - -        | 13             | 9                 | 22     | 10              | 22                           | -                                   |
| Cholera without collapse - - -   | 8              | 4                 | 12     | -               | 12                           | -                                   |
| Cholera,—Collapse - - -          | 4              | 1                 | 5      | -               | 5                            | -                                   |
| Cholera,—Consecutive Fever - - - | 1              | 1                 | 2      | -               | 2                            | -                                   |
| Total                            | 53             | 31                | 84     | 52              | 42                           | -                                   |

I hereby certify that I commenced my Visits at o'clock A.M., and completed them at o'clock P.M., and that the above is a correct return.

Examined,

Signature of Visitor.

Medical Officer.

Date.

## FORM D.

## MEDICAL OFFICER'S SHORT DAILY RETURN OF NUMBERS.

(To be made by all Medical Officers of Districts and by Officers of Dispensaries or Hospitals.)

*Registration District* }  
*or Union.* }

NUMBER OF CASES seen by me to-day for the First Time.

|   | Suffering, when first seen, from |            |                |           |                    | Total Cases of Diarrhœa and Cholera. |
|---|----------------------------------|------------|----------------|-----------|--------------------|--------------------------------------|
|   | Diarrhœa.                        |            | Cholera.       |           |                    |                                      |
|   | Simple.                          | Choleraic. | Primary Stage. | Collapse. | Consecutive Fever. |                                      |
| Total cases seen for FIRST TIME - }   | 20                               | 7          | 3              | 2         | 1                  | 35                                   |
| Of the above numbers the following have NOT BEEN PREVIOUSLY SEEN by the HOUSE-TO-HOUSE VISITORS or the Dispensary Officers* - - - } | 10                               | 2          | 1              | 1         | —                  | 14                                   |

\* Marks should be made against each case of this kind in the Forms A. and B. for the record of cases.

I hereby certify that the above is a correct return.

JOHN JONES.

\_\_\_\_\_  
*Address.*

\_\_\_\_\_  
*Date.*



## FORM E.

MEDICAL SUPERINTENDENT'S DAILY SUMMARY OF NEW CASES OF  
CHOLERA AND DIARRHŒA.

|  | Diarrhœa. |            | Cholera.             |           |                       | Total<br>New<br>Cases. |
|--|-----------|------------|----------------------|-----------|-----------------------|------------------------|
|  | Simple.   | Choleraic. | Without<br>Collapse. | Collapse. | Consecutive<br>Fever. |                        |
| Cases first seen this day by<br>House-to-House Visitors:   |           |            |                      |           |                       |                        |
| By Mr. <i>John Jones</i> - -   | 20        | 5          | 3                    | 2         | —                     | 30                     |
| „ <i>Edward Evans</i> - -  | 47        | 31         | 9                    | 7         | 1                     | 95                     |
| Cases first seen by Medical<br>Officer to-day, EXCLUSIVE of<br>those seen and previously<br>returned by House-to-House<br>Visitor: |           |            |                      |           |                       |                        |
| By Mr. <i>Thomas Wilkins</i> -   | 26        | 13         | 2                    | —         | —                     | 41                     |
| „ <i>Evan Roberts</i> - -  | 15        | 7          | 3                    | 1         | 1                     | 27                     |
| New cases first seen by private<br>medical practitioners to-day:   |           |            |                      |           |                       |                        |
| By Mr. <i>William Davis</i> - -  | 13        | 6          | 4                    | 1         | —                     | 24                     |
| „ <i>Thomas Williams</i> - -   | 7         | 5          | 3                    | 1         | —                     | 16                     |
| Total New Cases - -  | 128       | 67         | 24                   | 12        | 2                     | 233                    |

The above return has been accurately transcribed from the returns.

Medical Superintendent.

day of 1854.

NOTE.—The Medical Superintendent will incorporate the last line in his daily return to the General Board of Health; and he will carefully preserve the returns of the medical practitioners and of the house-to-house visitors from which the transcript has been made.

He will collect the returns A. and B. from the medical practitioners and from the dispensaries and hospitals at the close of the epidemic, and forward them to the General Board of Health.

## FORM F.

NOTE.—Every house in the infected parts should be visited by the Inspector of Nuisances or

NOTE.—Every house in the infected parts should be visited by the Inspector of Nuisances or





## APPENDIX 3.

(TO INSTRUCTIONS TO LOCAL AUTHORITIES, &amp;c.)

*Form of Notice to Owners and Managers of Public or Private Works and Establishments.*

SIR,

I AM directed by the Guardians of the Poor of \_\_\_\_\_ to call your attention to the accompanying notice, which they have deemed it their duty to issue to owners, managers, and overseers of public works and establishments, and others who employ or have under their care large numbers of persons.

I am, &amp;c.

Clerk to the Board of Guardians.

## NOTICE.

Experience has fully shown that during the prevalence of epidemic cholera, owners, managers, and overseers of works and establishments have it in their power, by proper precautions, to effect a great saving of life among their work-people.

It is of great importance to bear in mind that the workers in large establishments usually leave home before the time at which the house-to-house visitation can be systematically commenced, and are therefore deprived of the benefits of this most important measure of prevention.

In all places where numbers of people daily assemble at work, the first care of persons in charge of the work-people should be to make an arrangement by which an inquiry may be daily made as to the existence of looseness of the bowels among any individuals in the establishment. For this purpose, one trustworthy person in each story or room should be selected, who should be duly instructed in this duty.

This inquiry ought to extend over the whole period of the epidemic influence, and should be made in the morning, when the work-people first assemble.

The great importance of paying attention to the very first signs of choleraic disease ought to be impressed upon the people, also the advisability of promptly seeking medical aid; and this caution should be impressed as applying alike to their being attacked in the establishment warehouse, or factory, as at their own homes.

The majority of cases of cholera which prove fatal, terminate in twenty-four hours; the period for the application of preventive treatment is therefore so short, that the loss of an hour may be the loss of life.

The arrangements for the prevention and mitigation of the disease ought to be made thoroughly known, and for that purpose the hand-bills and placards of the authorities should be posted up in some conspicuous place in each story or room in the establishments and factories.

At all the establishments a supply of the medicines, with the printed instructions, adopted by the parochial medical officers, should be kept, and be readily accessible to the members of the establishments, and to the work-people.

Where establishments are superintended by their own medical officers, upon such officers should be devolved the duties of seeing that the instructions are carried out, and that proper medicines are supplied to the

work-people ; but in no cases should the duty of daily inquiry, and the providing of remedies on the spot be neglected. Where no medical officers are in charge of such establishments, special medical officers should be appointed.

A record of the persons that apply for medicine, should be kept, in order that the attention of the medical officer may be promptly called to all such cases.

The same instructions as the above apply with peculiar force to all assemblies of children at schools, and, in fact, to all persons who have the care, management, or superintendence of numbers of persons.

The principle holds equally true with regard to all domestic establishments. Thus the heads of families should make similar inquiries.

#### APPENDIX 4.

(TO INSTRUCTIONS TO LOCAL AUTHORITIES, &c.)

#### GENERAL BOARD OF HEALTH.

##### QUERIES.

Addressed to Dr. or Mr. \_\_\_\_\_, Medical Officer in the Town,  
Parish, City, or Union of \_\_\_\_\_.

1. How long have you been employed as medical officer ?
2. In what district have you been employed ?
3. What has been the total number of cases treated by you of  
Diarrhœa ?  
Cholera ?  
Collapse ?

And how many died ?

4. Will you specify any particular sanitary evils in your district which have been brought to light during the epidemic ?
5. In the course of your service have you discovered any place the sanitary arrangements of which were tolerably perfect, yet where, nevertheless, cholera prevailed ? Were the cases occurring in such localities exceptional cases or imported ?
6. Has there been any, and what is the amount of, improvement in the sanitary condition of your district, effected since the outbreak of the epidemic ? Has such improvement partaken of a temporary or permanent character ?
7. Have the nuisances which you reported been abated, and to what extent ?

8. Have cleansing works been instituted in the houses of the poorer classes where cholera eases or deaths have occurred?
9. Will you state the local and removable causes in the district visited by you which you believe have contributed to the localization and spread of the disease?
10. Has overcrowding prevailed, and to what extent?
11. Have you observed any peculiarities in this epidemic?
12. To what extent did the district suffer from previous epidemics?
13. Did former epidemics of cholera prevail in the same or in different spots?
14. Enumerate the spots most severely visited by cholera on former occasions, and those most severely visited in the present epidemic, and state whether in the interval between the epidemic of 1849 and that of 1854 any alteration has taken place in the sanitary condition of these two classes of localities.

(Signed) \_\_\_\_\_

(*Stating Qualifications.*) \_\_\_\_\_

(*Date.*) \_\_\_\_\_

Medical Officer.

*The Medical Officer is requested to address his replies to T. Taylor, Esquire, Secretary, General Board of Health. It is not necessary to prepay the postage.*

*Note.*—If any other point should deserve notice, it should be inserted at the end, under the head of General or Special Remarks.

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DIRECTIONS and REGULATIONS of the GENERAL BOARD of HEALTH,  
issued under authority of the Nuisances Removal and Diseases  
Prevention Act, 1848.

In exercise of the authority vested in us, we, the General Board of Health, direct the guardians and overseers in all unions, parishes, and places in England and Wales, as follows:—

I. To have made out a list of the places within the union or parish where cases of cholera, diarrhoea, or any epidemic or endemic



disease, may have lately been frequent, and to give the list or portions of the list relating to the particular districts to the medical officer of each district to which it shall relate.

And to require the medical officer to visit the places within his district named in such list, and examine the houses as to their present condition, or as to any predisposing and removable causes of disease likely to affect the inmates.

II. To direct their medical officer to give a written list to the guardians of all places in a state dangerous to health, or needing cleansing, and of filthy and unwholesome dwelling houses, and of all nuisances within his knowledge that may be abated, cleansed, and removed under these regulations.

III. To see that all town councils, commissioners under Local Acts, local boards of health, highway boards, surveyors and district or assistant surveyors of highways, road trustees or commissioners, county surveyors, and others now by law entrusted with the control of streets and places within the parts to which these directions and regulations extend, do exert their powers for the cleansing of all places under their control, particularly those included in the above list of the medical officer.

IV. To see that places not entrusted by law to the care of any town council, local board of health, commissioners, surveyors, trustees, or others, are kept clean by owners or occupiers of houses or tenements adjoining by effectual washing or otherwise, and with the use of such disinfectants as the medical officer shall direct.

V. Where there is any default in cleansing or removing nuisances by neglect of any such town council, local board of health, commissioners, surveyors, trustees, or others, or by reason of poverty of occupiers or otherwise; to cause such places to be cleansed, and all nuisances to be removed therefrom.

VI. When any dwelling house is in such a condition as to be a nuisance or injurious to health; or,

Where upon, adjoining to, or near any premises or place as aforesaid, there is any drain, ditch, gutter, watercourse, privy, cesspool, or ashpit, kept or constructed so as to be a nuisance or injurious to health; or,

Where upon, adjoining to, or near any such premises or places, swine or any other animal, or any accumulation of dung, manure, offal, filth, refuse, or other matter or thing, shall be kept so as to be a nuisance or injurious to health;

To see that the owner or occupier, or the person having the care of such dwelling house or premises, or the person causing the nuisance, forthwith cleanses, whitewashes, ventilates, or otherwise purifies, as the case may require, such dwelling house or premises, or otherwise abates or removes the nuisance or matter injurious to health.

And if default be made herein by reason of the poverty of the owner, occupier, or other person or otherwise, and complaint shall have been made as herein-after provided;

To see that the local authority empowered to act in the place where the premises complained of shall be situate, or, if there shall be no such local authority, or the local authority shall delay for an unreasonable time,—themselves to take all proper means for carrying into effect the directions above prescribed for the owner or occupier.

VII. When any complaint under the 1st section of the Nuisances Removal and Diseases Prevention Act, 1848, or any certificate under the Nuisances Removal and Diseases Prevention Amendment Act, 1849, is made to the guardians, to cause proceedings to be taken under the first section of the former Act; or to forward the complaint to any other local authority who may have legal power to deal with the nuisance; or if there has been previous default on the part of such local authority, forthwith, if necessary, to proceed on the complaint themselves, under the said Acts.

VIII. Where they consider the case one of urgency, to cause any such dwelling house or premises to be cleansed and purified, and any such nuisance as herein-before described, to be forthwith removed and abated, without any previous complaint being made or to the local authority.

IX. To order every medical officer upon any unusual amount of diarrhoea, or any case of cholera becoming known to him within his district, to report the same to the guardians.

X. Where cholera is present or imminent;

To provide sufficient medical aid for house to house visitation, and for medical treatment of the sick, and for dispensing medicines, and issuing notices stating where such aid and medicines have been provided.

XI. To provide places for accommodating necessitous sick who cannot be properly treated in their own houses.

XII. To provide places to which may be removed the families or fellow lodgers of necessitous persons attacked with cholera, and to cause the dwellings from which persons may have been so removed to be cleansed by the owners or persons having the care of them, or, in their default, by the guardians.

XIII. On the occurrence of any case of cholera in any room occupied by one family or more, to cause the removal either of the patient or of so many of the occupants as the medical officer may deem necessary.

XIV. To provide when practicable and necessary, in case of death by cholera, for the speedy removal and interment the body.

XV. To make arrangements for obtaining daily lists of persons attacked by cholera within the Union, and for communicating the same weekly to the General Board of Health.

XVI. To appoint such medical and other officers as may be necessary to execute and superintend the execution of these Regulations, and to publish and circulate notices of the provisions of the said Acts for the prevention of nuisances, and of our directions and regulations, or such part of them as may appear expedient.



In these directions and regulations, the words "Guardians of the Poor" mean the guardians, directors, wardens, governors, or other like officers having the management of the poor of any union, parish or place where the matter requiring the cognizance of any such officers arises, and the expression "Local Authority" means the town council, local board of health, or any trustees or commissioners for the draining, paving, lighting, cleansing, managing, or directing the police of any town, borough, or place, highway board or any other body of a like nature, or any commissioners of sewers, or any body, excepting boards of guardians and overseers, having by law powers for the removal of nuisances.

Given under my hand and under the seal of the General Board of Health, this Eighth day of September One thousand eight hundred and fifty-four.

(L.S.)

B. HALL.

DIRECTIONS and REGULATIONS of the GENERAL BOARD of HEALTH,  
issued under the authority of the Nuisances Removal and  
Diseases Prevention Act, 1848.

IN exercise of the authority vested in us, we, the General Board of Health direct,

I. All surveyors, district or assistant surveyors of highways, trustees, county surveyors, and others by law entrusted with the care and management of streets and public ways and places, and where there are no public authorities so entrusted, the owners and occupiers of houses and tenements adjoining thereto, to take the measures necessary for the frequent and effectual cleansing thereof.

II. The owners and occupiers, and persons having the care and ordering of all houses, dwellings, churches, buildings, and places of assembly, to cleanse, purify, ventilate, and disinfect the same.

III. All local authorities and persons whatsoever to exert all the powers vested in them by law for the removal of nuisances.

IV. All relations of, or others in charge of the bodies of, persons who have died of cholera or other epidemic disease, to obey the directions of the medical officers of the guardians, as to the speedy interment of the dead.

In these directions and regulations, the word "Guardians" means the guardians, directors, wardens, governors, parochial board, or other like officers having the management of the poor of any union, parish, combination, or place where the matter requiring the cognizance of any such officers arises; and the expression "Local Authority" means the town council, local board of health, or any trustees or commissioners for the draining, paving, lighting, cleansing, managing or directing the police of any town, borough, or place, highway board, or any other body of a like nature, or any



commissioners of sewers, or any body, excepting boards of guardians and overseers, having by law powers for the removal of nuisances.

Given under my hand and under the seal of the General Board of Health, this Fourteenth day of September One thousand eight hundred and fifty-four.

(L.S.)

B. HALL.

SIR,

General Board of Health,  
Whitehall, September 1854.

I am directed by the General Board of Health to enclose to you, with the regulations and directions issued by the Board in pursuance of the 10th section of the Nuisances Removal and Diseases Prevention Act, (11 & 12 Viet. c. 123) the various publications of the Board prepared for local information and guidance under this distressing visitation.

I am to impress in the strongest terms upon the minds of the parochial authorities the heavy responsibility thrown upon them by the provision of the law which makes it their business during an epidemic to see executed, or to execute themselves, the regulations and directions of the Board.

These regulations and directions are of two classes; the first class is aimed at the most prevalent forms of nuisance, (in so far as the law permits this Board to reach them) and these nuisances it is the duty of the parochial authorities to see removed by those who have the legal control of the premises, or in default of any on whom this duty may be enforced, themselves to remove them in the manner pointed out by the Act.

This is peculiarly a preventive work, and its object is to do away with the state of things which experience has proved to be most likely to bring down the epidemic in particular spots.

But when the epidemic comes, it is too late to trust for safety to the execution of these directions only.

At this point that other class of the Board's regulations and directions which provides for medical relief should come into play.

The directions on this point are general and brief.

But with them is sent a minute of instruction, which sets out in the fullest detail the arrangements by which medical aid may be placed within reach of all who require it, and, where necessary, house-to-house visitation established, houses of refuge provided, and all other measures taken which the actual presence of the epidemic renders necessary.

If the will to do this duty exist on the part of the parochial authorities this minute supplies all the information required to enable them to carry out their duty in practical working.

Where arrangements in accordance with that minute have been conducted in a judicious and not niggardly spirit, experience has proved that the ravages of the epidemic may be confined within very narrow limits.

It should not be forgotten that the duty of making such arrangements is not one imposed on the parochial authorities by humanity only, but that it is also a work laid upon them by the law, the neglect of which is made punishable by the statute which imposes it. For although the members of parochial bodies are elected of their own free will, yet, when they have voluntarily accepted the responsibilities of an office, the law will not allow them to neglect their duties to the inhabitants of the district they are acting for, in so far as the Legislature has intrusted them to their care.

The purpose of this letter is to state the Board's view of the nature of these duties and responsibilities (in reference to epidemic disease), in order that local authorities may not be able to avail themselves of the plea of ignorance, should the imputation of neglect be brought home to them.

I have the honour to be, Sir,  
Your obedient Servant,  
T. TAYLOR, Sec.

#### REMOVAL OF NUISANCES.

The intimate connexion between filth, foul smells and disease being assumed to be generally admitted, and many applications being daily made to this Board either to remove nuisances, or to give information how the removal of nuisances can be effected, the following plain directions for that purpose, will, the Board believe, be found useful at this moment.

The nuisances which may be dealt with under "The Nuisance Removal and Diseases Prevention Act, 1848," (11 and 12 Vict. 123), and the Regulations and Directions of the General Board of Health, issued in pursuance of that Act, broadly classed, are of two kinds.

- 1st. Nuisances removable by cleansing, such as filthy house walls, over-charged cesspools, unscavenged streets, foul dust bins, manure heaps, ash-pits, dirty pigsties, &c.
- 2d. Nuisances requiring the construction of works for their removal, such as houses unwholesome for want of drains, accumulations of liquid refuse requiring drains to carry them off, &c.

Consider to which of these classes the nuisance you complain of belongs.

##### I. How to get rid of nuisances removable by cleansing.

If to the 1st class, *address a short intelligible complaint of the nuisance, in writing, to any existing body having authority to make local improvements*; as the town council, board of trustees, or commissioners for the repair, paving, lighting, cleansing or draining of the highways, the highway board, or any other similar body; or, in default of any of them, to the Board of Guardians.

The Board's regulations prescribe no particular form for this complaint, but it should be precise in describing the place or giving the address of the premises where the nuisance is.

It is the duty of each and all the above local authorities, immediately on the receipt of such complaint as above, to make inquiry and take such measures as may be necessary for its removal, or in default of their doing



so, the Guardians, under the regulations and directions which have been issued to them, are to make inquiry into the complaint, and if they find that it is well-founded, to call upon the persons having power by law to remove it, to do so.

If these persons neglect or omit to remove the nuisance,

The Guardians have power, and it is their duty to remove it, instead of these persons—and they are empowered to proceed against the defaulters (if culpable) for a penalty under the Act, up to 5*l*.

## II. How to get rid of nuisances removable by constructing works.

To do this requires a less summary and simple process.

The proper mode of proceeding in this case is not, as in the former, under the regulations and directions of the General Board of Health, but under the 1st section of the Nuisances Removal Act, addressed to *any existing body having authority to make local improvements*; as the town council, board or trustees or commissioners for the repair, paving, lighting, cleansing, or draining of the highways, the highway board, or any similar body; or, in default of any of them, to the Board of Guardians in the form given by that Act.

*A complaint must be signed by two householders, or the nuisance must be certified to the Guardians by the medical relieving officer of the union, or, if it exist in or about a common lodging-house, by a police constable, or inspector of common lodging-houses.*

On this the local authorities, and, in default of them, the Guardians, are bound, after examination into the case, or without examination, on the written certificate of two legally qualified medical practitioners, to complain before a magistrate, who can summon the owner or occupier of the premises where the nuisance exists, before two justices (or in London before any police magistrate) and on hearing of the summons an order may be made for the removal or abatement of the cause of complaint.

If this order be not obeyed, it is the duty of the local authority instituting the complaint to carry the order into effect, and the cost falls on the persons on whom the order was made.

As nothing in the Nuisances Removal Act is to interfere with the jurisdiction of the Commissioners of Sewers (sect. 5), when the order is one which involves an authority from them, it should require the execution of the work conformably to the regulations of those Commissioners, who have declared themselves ready to co-operate with the local authorities and Guardians to the utmost in carrying out the provisions of the Act.

They will furnish information, at their district offices,\* as to the state of the sewerage of particular localities.

\* Branch Office for the Tower Hamlets and Poplar districts, and Finsbury division—No. 15, Great Alie-street, Goodman's-fields. Office hours 9 o'clock A.M., to 4 P.M.

Principal office of the Commission, and branch office for the Holborn division, and eastern and western divisions of Westminster and Regent-street, and Regents-park district—1 Greek-street, Soho. Office hours, 9 o'clock A.M., to 4 o'clock P.M.

Branch office for portions of the Ranelagh Counters Creek, and Fulham and Hammer-smith districts—No. 22, Inverness-road, Bayswater. Office hours, 10 o'clock A.M., to 12 o'clock at noon.

Branch office for portions of the Ranelagh Counters Creek, and Fulham and Hammer-smith districts—No. 45, Grove-place, Brompton. Office hours, 10 o'clock A.M., to 12 o'clock at noon.

Branch office for the whole of the district south of the River Thames—No. 64, Borough-road. Office hours from 9 o'clock A.M., to 4 o'clock P.M.



SHORT RECOMMENDATIONS TO GUARDIANS IN TIMES OF  
CHOLERAIC DISEASE,

*In execution of the powers derived from the regulations and directions of the General Board of Health, issued under Order in Council.*

1. Divide your union amongst committees of the guardians.
2. Give your medical officers assistance if they require it.
3. Direct your chief attention to places where diarrhœa prevails, or where fevers or other epidemic disease have generally been most prevalent. Your medical and relieving officers know these places.
4. Look to the cleansing of roads, streets, and courts; and see that surveyors, paving and improvement commissioners, and others, having by law power to cleanse, carry out their powers.
5. In their default, or when they have no power, yourselves see to the cleansing of such streets, roads and courts. In the courts of poor neighbourhoods, where refuse is thrown on the public way, wash the surface daily with streams of water.
6. Appoint a committee for the receipt of complaints of nuisances, and see that the proper officer attends to such complaints, and reports what he does therein.
7. In all cleansing operations, where foul smells may arise, let disinfectants, such as quick-lime, peat-charcoal, chloride of lime or of zinc, or chlorine gas, disengaged by pouring sulphuric acid on common salt, in the proportions of a wine glassful of the acid (common oil of vitriol) to a pint of salt, be freely used.
8. Filthy houses should be lime-washed, and accumulations of all kinds promptly removed without expense to the occupant, when poor.
9. Let the paramount importance of free ventilation in all houses be constantly and most urgently inculcated.
10. Insist on the greatest possible cleanliness in the vagrant wards of union-houses, and in common lodging-houses; and enforce, as far as possible, personal cleanliness on the part of the inmates of those places.
11. Look to the water in your district, and adopt every practicable means to ensure its supply in a state of purity.
12. Direct your medical officers to report to you any unusual prevalence of bowel complaint or diarrhœa, and any case of cholera, in their respective districts.
13. On the earliest appearance of choleraic disease, assemble your medical officers, and carry out, as far as may seem necessary, the instructions of the General Board of Health as to preventive measures, dispensaries, and medical aid, which instructions have already been supplied to you by that Board.

14. Make known your arrangements for relief by plain hand-bills, freely circulated.

15. Give warning, by hand-bills, of the importance of applying, on the first symptoms of diarrhœa, to your medical officers, for advice and medicine, and that the same will be given gratuitously.



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# GENERAL BOARD OF HEALTH.

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## LETTER

OF THE

PRESIDENT OF THE GENERAL BOARD OF HEALTH,

TO

THE RIGHT HONOURABLE THE VISCOUNT PALMERSTON,  
SECRETARY OF STATE FOR THE HOME DEPARTMENT, &c., &c.,

ACCOMPANYING A

REPORT FROM DR. SUTHERLAND;

ON

EPIDEMIC CHOLERA  
IN THE METROPOLIS IN 1854.

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Presented to both Houses of Parliament by Command of Her Majesty.

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FOR HER MAJESTY'S STATIONERY OFFICE.

1855.